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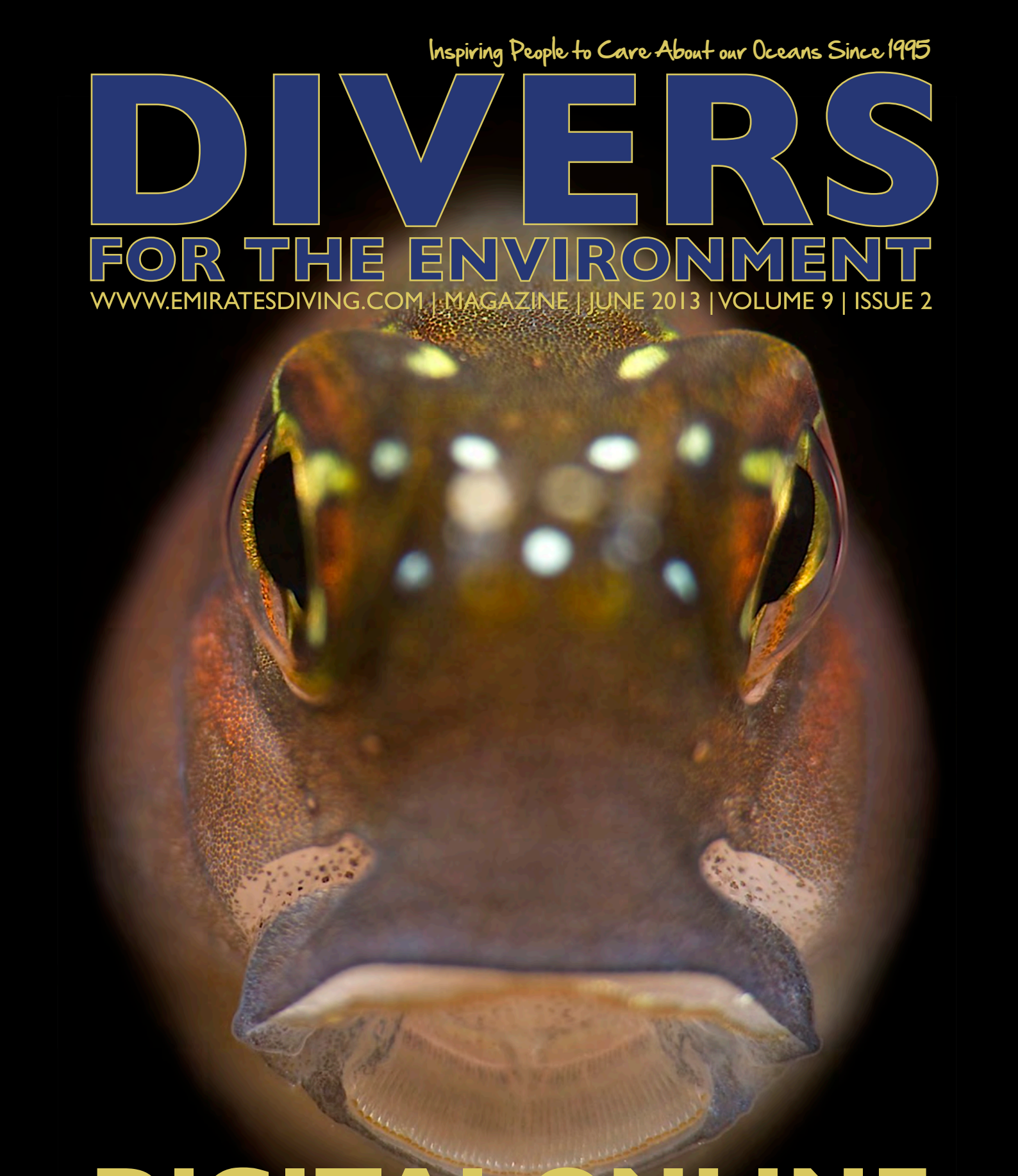

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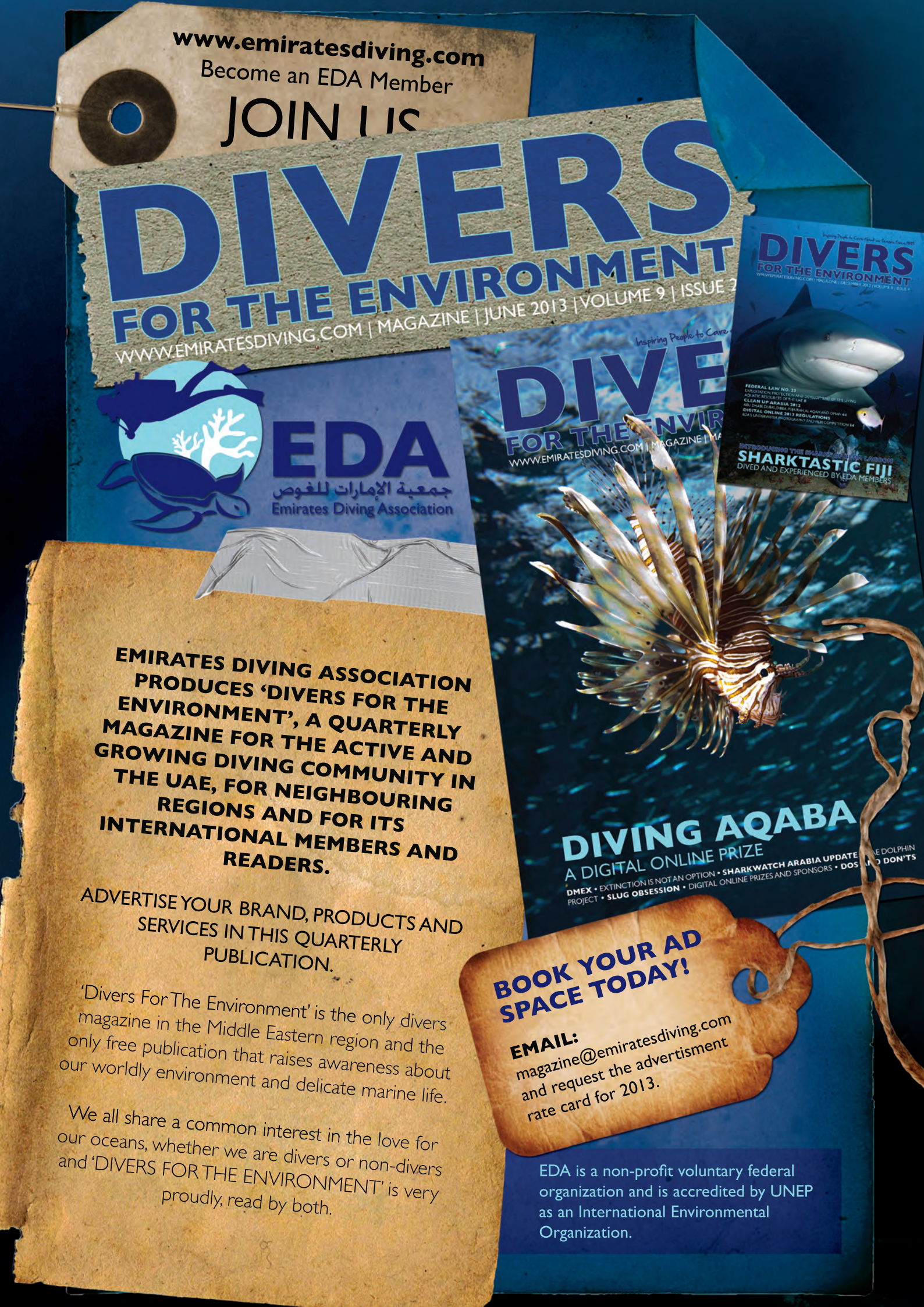

EMIRATES DIVING ASSOCIATION PRODUCES 'DIVERS FOR THE ENVIRONMENT', A QUARTERLY MAGAZINE FOR THE ACTIVE AND GROWING DIVING COMMUNITY IN THE UAE, FOR NEIGHBOURING REGIONS AND FOR ITS INTERNATIONAL MEMBERS AND READERS.

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'Divers For The Environment' is the only divers magazine in the Middle Eastern region and the only free publication that raises awareness about our worldly environment and delicate marine life.

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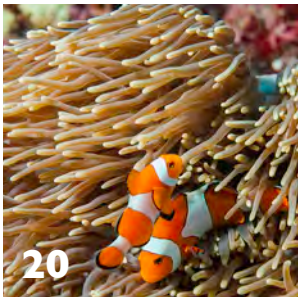
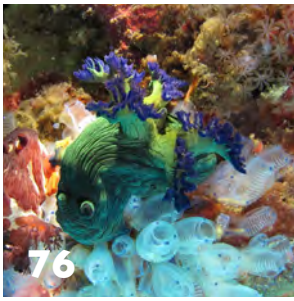
CONTENTS





REGULARS

NEWS

CORAL NEWS

REEF CHECK

FEATURES

DIVERS FOR THE ENVIRONMENT

Please note that EDA's magazine, "Divers for the Environment" includes articles written by individuals whose opinions, whilst valid, may or may not represent that of EDA. It is hoped that the magazine can become a platform for individuals to voice their opinion on marine and diving related issues. You are welcome to submit an article for the next issue of "Divers for the Environment" released in September 2013. Send all articles, feedback or comments to: **magazine@emiratesdiving.com**

EDA COVER

PHOTO BY IYAD SULEYMAN

DIGITAL ONLINE WINNER – FISH CATEGORY

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CONTENTS

UNEP

THINK•EAT•SAVE

WORLD ENVIRONMENT DAY 5 JUNE

UW PHOTOGRAPHY

DIVING DESTINATIONS

HEALTH

THE EVOLUTION OF DIVING

IBRAHIM N. AL-ZU'BI
EDA Executive Director

Welcome to the June issue of 'Divers for the Environment'! The first half of 2013 has proved to be an exceptionally busy period for us here at EDA. March saw the largest Dive Middle East Exhibition (DMEX), the region's only dive show, cover more than 400sqm with more than 35 participating exhibitors. Every year, I say how DMEX is growing, but truly it is getting bigger and better with each passing year, which allows us a fantastic opportunity to continue the education and interest in diving here in the UAE and abroad and acts as a platform to let others know of the great work that we all do in conserving our oceans.

Recently we again saw fantastic talent being submitted for our Digital Online Underwater Photography Competition. The standard of work and images captured by our long supporting members and recently joined EDA members is evidence of the amazing evolution of diving that we witness in the UAE and the region. This year's competition saw a new addition to our panel of judges, with the participation of wildlife and underwater photographer extraordinaire and Secretary General of the HH Sheikh Hamdan Bin Mohammed Bin Rashid Al Maktoum International Photography Award, Mr. Ali Bin Thalith. I don't envy the judges task in deciding the winners as this year's entries took the underwater captures to another level yet again with some snaps from some of the best photographers in the UAE. For the extremely hard job and dedication, I would like to take this opportunity to thank each and every one of our judges. We had entries from 49 candidates with a total of 143 photos and 6 videos showcasing some amazing underwater images and footage. I believe this is yet further evidence of the maturity as well as the strong and positive evolution of diving in the UAE. I would like to thank all of our members who participated, and I would also like to say congratulations to our 3 overall competition winners; Iyad Suleyman, winner for the 'Professional Photography' section, whose winning image is on the cover of this issue; Michael Sauter, winner of the 'Amateur Photography' section and Khaled Sultani, winner of the 'Video' section. The bar has certainly been raised for next year, so start practicing now for that winning shot!

EDA celebrated the earth hour as it does every year and hosted the sneak peak screening of 'Plastic Oceans', a moving documentary highlighting the harm being caused to our oceans and wildlife through ignorance and general lack of education in our communities. This documentary is an example of how passion projects can change the way people live, think and treat our planet, and you can read more about this and the documentary's fantastic Producer, Jo Buxton on page 8.

This issue also covers important articles about the environment, education, science and technical parts of diving, in addition to our latest Reef Check news about the research done for the condition of the coral reefs in our seas. A must read article is the PADI Seal Team Diving Adventures, by EDA's member Mr. Syed Rahman, Founder of Kids Scuba Malaysia and the Director of the Malaysia Diving Association.

You will notice from the diversity of articles featured in this issue, why the theme is focused around 'Evolution.' From the rise of diving activities organized by EDA, to various stakeholder interests in the community, which I'm happy to announce also includes non-divers who also share a determined passion to protect our oceans.

As always, you'll be reading important and imperative health and safety articles by our fantastic Health and Safety committee, Dr. Barbara Karin Vela. DAN, who I'm sure you all met at our EDA stand during DMEX, share some excellent articles that strive to raise awareness and enhance the safety of diving in the UAE and the region.

In this issue's Diving Destinations section, you will read tips about diving in the Philippines, Oman, Costa Rica, Egypt, Belize and other fascinating destinations across the globe. Thanks to all of the EDA members who have shared their insightful diving experiences with us for this issue. Your insights and articles are imperative in recommending when and where to go diving, as well as what to look out for on your trip so please do keep them coming in!

I hope you enjoy reading our June issue of Divers for the Environment. Please do keep giving us your support, articles, photography and advice to ensure that we remain protectors of our seas, and educate people to help us in our mission.

Happy reading and safe Eco Diving!

Ibrahim Al-Zu'bi

EARTH HOUR EVENT – THE ARCHIVE AT SAFA PARK

Hundreds of millions of people, businesses and governments around the world unite each year to support the largest environmental event in history – Earth Hour.

More than 7,000 cities and towns across the globe switched off their lights for Earth Hour in 2012, sending a powerful message for action to save the planet.

This year, in collaboration with The Archive, Emirates Diving Association hosted an Earth Hour 2013 event at The Archive, at Al Safa Park, Gate 5. The event took place from 8pm to 10pm on Saturday, March 23rd, 2013.

The theme of the Earth Hour 2013 event was "disconnect to connect" The idea being, in today's digitally connected world, we are disconnected from social reality. The event was designed to connect people of all ages, backgrounds and nationalities in an outdoors location where they can interact with one another away from their offices and homes. The event was organised into four simultaneous sessions:

- Connect Cards – Opening ourselves to strangers, these flash cards were filled with interesting facts and discussion questions to start a conversation.
- Good 50x70 – Posters designed by students from across the globe, covering global issues such as endangered animals, global warming, water scarcity, poverty, and women's rights were displayed inside the Archive for all to see.
- Take Action – Postcards were handed out with tips to reduce our environmental impacts by making small changes in our everyday life.
- Drum for Earth – Three 20 minute drumming sessions took place during the event, in which guests were invited to participate in the drumming to create a sense of community and team work.

EDA ORGANISES A CLEAN UP FOR MAF FASHION

EDA organised a clean up for Majid Al Futtaim – Fashion, on the 29th April 2013.

Around 50 people participated in the clean up on Jumeirah Open Beach which kicked off at 7am. At first glance, the beach looked clean and everyone was wondering what they were going to collect, but as soon as everyone set out with their bags and gloves, they realised that there was lots of rubbish around. The bags were filled to the rim by the time they finished! A total of 17 bags from the beach (approx 65kgs) and 8 bags from the dive clean up (approx 24kgs).

ITEMS COLLECTED	TOTAL
Bags (paper)	8
Bags (plastic)	60
Balloons	10
Beverage Bottles (plastic)	83
Beverage Bottles (glass)	19
Beverage Cans	19
Caps, Lids	52
Clothing, Shoes	13
Cups, Plates, Forks, Knives, Spoons	70
Food Wrappers/Containers	123
Pull Tabs	10
Straws, Stirrers	85
Toys	3
Fishing line	7
Fishing Nets	2
Light Bulbs/ Tubes	1
Pallets	15
Plastic Sheeting/ Traps	10
Rope	41
Strapping Bands	5
Cigarettes/Cigarette Filters	576
Cigarette Lighters	6
Cigar Tips	100
Tobacco Packaging/Wrappers	14
Batteries	12
Building Materials	1
Condoms	2
Diapers	3
Syringes	2
Tampons/Tampon Applicators	1

‘PLASTIC OCEANS’ A DOCUMENTARY SNEAK PEAK

EDA had the pleasure of hosting a sneak peak of the documentary, Plastic Oceans at VOX Cinemas in Mercato Mall. We were honoured to have Jo Ruxton, the producer of the documentary, present at the screening where she gave a presentation on plastic and how it affects us and our environment. The evening ended with a Q&A session.

Jo set out to make the film 4 years ago and the more she learned about the subject, the more she realised how important it is that we spread awareness on the problem. It is not just that plastic is an eyesore in the natural world, but it is now entering the food-chain and even more worrying, is the fact that it attracts toxins at an alarming rate. These are the toxins that are associated with many of the health issues that are on the increase, from auto-immune deficiencies to cancer, endocrine disruption, infertility and cognitive developmental problems in children.

Jo wanted the message to go well beyond the release of the film and that is why she set up the Plastic Oceans Foundation. So that they can continue to raise funds for education, research and awareness campaigns.

www.plasticoceans.org

EDA PRESENTS TO MAF HOTELS

On the 21st of every month, Accor Hotels celebrates the Planet 21 Day. It is the Worldwide Accor employees' mobilization day in favor of sustainable development. It refers to their Planet 21 program's social and environmental commitments. Therefore, EDA was invited to present to around 25 participants from MAF Hotels. The presentation took place in Novotel DCC on Monday 22nd April from 3pm to 4pm, which also happened to be Earth Day so it was a good day to give a talk about what EDA does with a full review of our events and projects and how volunteers can be involved. The presentation was concluded by Rita Bento explaining what Coral Reefs are, their importance and why we should protect them.

The information presented sparked a lot of interest in the audience so there was a Q&A at the end of the session.

DIVE MIDDLE EAST EXHIBITION 2013

A recap of DMEX at the Dubai International Marine Club, Mina Seyahi on 5-9 March 2013. The first and only dive exhibition in the Middle East, 35% bigger in 2013 and the largest platform for the diving industry and diving enthusiasts from the region!


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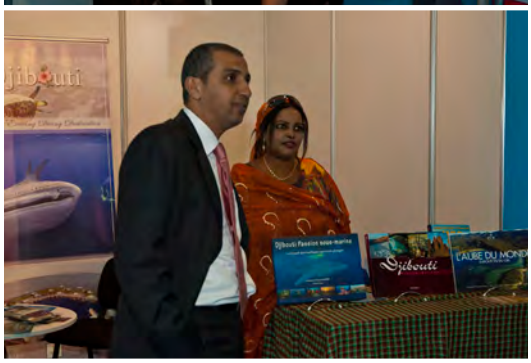
red sea eXplorers
SUEX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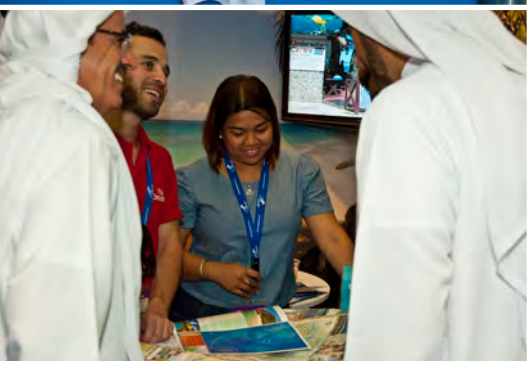

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RYAN BUTLER'S EAGLE PROJECT

Al Boom Diving recently did a reef project with the American School Of Dubai's (ASD) Scout group, under the name of Eagle Project.

6 massive reef balls were manufactured by Eco Plastics and the scouts had a direct hand in building them. The reef balls were manufactured from 852kgs of used plastic (63,114 plastic bags, 21,300 plastic water containers, and 243,426 plastic cups). Instead of the used plastic filling landfills, it was reconstructed into habitable living structures in support of a healthy and long lasting aquatic habitat!

BUILDING THE REEF BALLS: 30 scouts and scout adults had a direct hand in building the 6 reef balls. They did so under the supervision of the Eco Plastics carpenter and staff.

IMPLEMENTATION: As each reef ball was 650kgs, the dive masters at Al Boom then arranged for the reef balls to be put into the water under their direct supervision and professional oversight. Six scouts also interfaced with Al Boom dive masters during the implementation. Fish have already started inhabiting the artificial reef structure within the first week!

PADI JUNIOR OPEN WATER GRADUATION
DURING THE OPENING OF THE MABUL WORLD TURTLE DAY 2013

The kids receiving their certificates with the Assistant Tourism Minister, Sabah.

With Dato Seri Michelle Yeoh who conducted the turtle tagging program with the kids.

Four PADI Jr. Open Water students from Kids Scuba received their PADI Certificate and Temp Card from the Assistant Tourism, Culture and Environment Minister YB Datuk Pang Yuk Ming during the official launch of Mabul World Turtle Day 2013.

The Mabul World Turtle Day program was held on Mabul Island in collaboration with the Borneo Marine Research Institute (BMRI) from the University Malaysia Sabah (UMS) in conjunction with the World Turtle Day 2013 from May 22-24.

The four PADI Junior Open Water Divers – Danial Hafiz, Nur Qamarina, Nur Ainah and Najwa Amni were specially trained on Mabul Island by Syed Abd Rahman, PADI MSDT from Kids Scuba and his team three days prior to the program for the kids to witness the underwater turtle catching and tagging process for scientific research.

The program also involves other Scuba Diver volunteers to catch, photograph, measure and tag the resident turtles found in the waters of the renowned island off Semporna, Sabah. Special celebrity guest Dato Seri Michelle Yeoh also assisted in the program with the kids.

The objective of this event is to create public awareness, while enhancing education, research and conservation of the sea turtle populations in the waters of Mabul involving the PADI Junior Open Water Divers.

The program was made possible with several partners to carry out the program, namely Uncle Chang's Resort, 1 Borneo Ballroom Sdn Bhd, Kids Scuba, PADI Asia Pacific, Borneo Divers Mabul Resort and The Borneo Connections Sdn Bhd.

HISTORIC SHARK DECISIONS SURVIVE FINAL THREAT AT CITES PLENARY

FIVE COMMERCIALLY VALUABLE SHARK SPECIES, MANTA RAYS & FRESHWATER SAWFISH LISTED

FEATURE **PROJECT AWARE**

BANGKOK, 14 MARCH 2013. CITES plenary today accepted Committee recommendations to list five species of highly traded sharks under the CITES Appendices, along with those for the listing of both manta rays and one species of sawfish. Japan, backed by Gambia and India, unsuccessfully challenged the Committee decision to list the oceanic whitetip shark, while Grenada and China failed in an attempt to reopen debate on listing three hammerhead species. Colombia, Senegal, Mexico and others took the floor to defend Committee decisions to list sharks.

"We are thrilled with this result and the groundswell of government commitment that made it happen," said Amie Brautigam, Marine Policy Advisor for Wildlife Conservation Society. "These hard-fought decisions to secure CITES regulations on international trade in sharks and rays are based on a solid foundation built over two decades, and surmount the long-standing opposition to listing shark species that are taken at a commercial scale."

The oceanic whitetip shark, porbeagle, three species of hammerheads, and both manta rays – all classified as threatened on the IUCN Red List – will now be added to CITES Appendix II, which prompts permits to ensure exports are sustainable and legal. The only sharks listed under CITES previous to this meeting – basking, whale, and white sharks – are not taken in the high volumes associated with the newly listed sharks. The freshwater sawfish will be transferred from Appendix II to I, where all other sawfishes are listed, thereby completing a global ban on international commercial trade in these critically endangered species.

"We're grateful to proponent governments for recognizing the value of thriving shark and ray populations, and for championing sound proposals," said Ania Budziak, Project AWARE's Associate Director. "We're proud that the divers' voice has contributed to achieving this key milestone in shark and ray conservation."

Proponents of the various listing proposals include the 27 Member States of the EU, Australia, Brazil, Colombia, Comoros, Costa Rica, Croatia, Ecuador, Egypt, Honduras, Mexico, and the USA. The shark and ray proposals received more than the two-thirds majority of votes necessary for adoption while the sawfish listing succeeded by consensus.

"With relief that the Committee decisions were not overturned, we now turn our focus to the essential phase of their implementation," said Sonja Fordham, President of Shark Advocates International. "We urge all Parties to recognize the urgency of the shark and ray plight and to begin this work to ensure the sustainability of international trade in newly listed species, as a matter of priority."

ARE YOU FINATICAL ABOUT SHARKS?

Join the Race to Save Sharks – Get Swimming to End Finning

The clock is ticking for vanishing shark species. This July, Project AWARE is looking for 100 Finathon™ champions to join the race to protect them. If you're FINatical about sharks, join the Finathon today and fundraise for their protection.

What is the Finathon™? Like a walkathon, fun run, cycle race or marathon – the Finathon™ is a great way to bring the community together, raise awareness and challenge funds to support shark conservation.

The Finathon concept was born in 2011 from one scuba diver's passion for sharks and has now swept the globe, raising critical funds for shark protection and inspiring a movement to end finning. The first Finathon™ took place in the town of Stoke on Trent, in the heart of England. An unlikely place to find a tribe of FINatical shark advocates. But more than 70 enthusiastic shark lovers turned up with PADI Course Director, Katy Bloor and Sub-Mission Dive Centre, put on their fins in protest against shark finning and swam 100 kilometers to raise for Project AWARE's shark campaign.

Since then, Finathon events have spanned the globe as supporters from the USA, Australia, Canada, Thailand and Malaysia are rallying local swimmers. Will divers in the Middle East join the race to put an end to shark finning?

Shark fishing is largely unregulated around the world. Overfishing, bycatch and finning – the slicing of sharks fining and throwing away the body at sea – kills thousands of sharks every day. Project AWARE has recently helped close loopholes in the EU finning ban and secure international trade protections for 8 of the world's most vulnerable sharks and rays. But, to ensure the survival of sharks, stricter, enforceable controls are needed for more species at national, regional and global levels.

"Having seen the effects of shark finning first hand in Thailand, it was really important to me to get involved and all of this has really shown me just how dedicated many of us are to this cause," said Caitlin Hale from Patriot Scuba. "There is still so much more to be done, but if we band together like this, we can really make a difference. I'm just glad that all of us here at Patriot are part of the solution."

Together, divers have a powerful, collective voice to secure protection for endangered shark species worldwide. The Finathon™ shows how one idea can become a catalyst for change. With the clock ticking for vanishing shark species the time to act is now.

Put you best FINS on to Raise Funds to help Project AWARE:

- Fight to stop shark finning
- Insist on full protections for critically endangered sharks
- Negotiate stronger policies to ensure a brighter future for all sharks

Make it official. Get swimming to help end shark finning. Join in a local Finathon™ in 2013 or grab tools and resources to help you organize an event in your community at **www.projectaware.org**.

ECOVER EXTENDS SPONSORSHIP OF THE BLUE MILE

AND ANNOUNCES NEW PARTNERSHIP WITH THE MARINE CONSERVATION SOCIETY

ABOUT THE ECOVER BLUE MILE

The Ecover Blue Mile is a mass-participation water sports event designed to encourage greater care of our blue environment. It was launched in 2010 as a flagship event and has expanded to over 200 grassroots events around the UK.

In 2013 a new schools event will be added to the programme to enable schools to take part and link school sport with marine conservation. For more information about the Ecover Blue Mile visit www.thebluemile.org.

ABOUT ECOVER

Ecover is the world's largest producer of ecological cleaning products, using sustainable plant and mineral-based ingredients to create highly effective cleaning products that achieve the lowest possible toxicity and the most rapid and complete biodegradability. Constantly innovating, Ecover continues to expand and improve its product range, including the development of a new Eco-Surfactant for use in its hard surface cleaners, meaning the range cleans as well as – or better than – the UK's leading conventional brands. All of Ecover's plastic bottles are made from Plant-astic – a 100 per cent renewable, reusable and recyclable plastic made from sugarcane. Ecover was the first cleaning brand in the UK to use Plant-astic and has used it across its product range since 2011. For more information on this pioneering brand, visit www.the-splash.co.uk

IN BRIEF

- Ecover extends their headline sponsorship of the Blue Mile for a further two years, as the Marine Conservation Society becomes the new official charity partner.
- Inspiring a new generation of sea champions, the Ecover Blue Mile aims to encourage more young people to get active for our seas, shores and wildlife.

Sport Environment, (12:03:13) is delighted to announce that Ecover, the innovative ecological cleaning products company, has extended its headline sponsorship of the Ecover Blue Mile for a further two years. The event which was created by triple round the world sailor and ocean advocate, Conrad Humphreys aims to encourage more people to get active in support of our marine environment.

The news follows last week's announcement that Ecover is to incorporate a percentage of reclaimed sea plastic into its packaging and to communicate their message in a bottle via major art and cultural events such as Glastonbury Festival and the Royal Hampton Court Flower Show.

The Ecover Blue Mile will support the Marine Conservation Society (MCS) as its new official charity partner. MCS is the UK's leading charity for the protection of our seas, shores and wildlife, and champions the need for marine wildlife protection, sustainable fisheries and clean seas and beaches.

Through education, community involvement and collaboration, MCS raises awareness of the many threats that face our seas and promotes individual, industry and government action to protect the marine environment. MCS provides information and guidance on many aspects of marine conservation and produces the annual Good Beach Guide, the Good Fish Guide and Fishonline on sustainable seafood, as well as involving thousands of volunteers in projects and surveys such as MCS Beachwatch. www.mcsuk.org.

The partnership with MCS aims to encourage people across the UK to connect with their local beach and waterway by doing a sponsored mile either in or next to water, in return for support from family and friends. We want to inspire a new generation of sea champions who enjoy getting active in support of our seas and would like to take on the challenge of paddling, swimming or even zorbing a blue mile for MCS.

HOW TO TAKE PART

1. Sign up to the Ecover Blue Mile flagship event on the 14th-15th September 2013.
2. Organise your own Blue Mile or ask your local club to get involved.
3. Take part in our Ecover Schools Blue Mile Challenge 2013

"At Ecover we are passionate about raising awareness of the importance of looking after our seas and are very proud to be continuing our sponsorship of the Ecover Blue Mile. All of our products are made from natural, sustainable plant-based ingredients, ensuring they respect aquatic life and we wholeheartedly support the work the Marine Conservation Society are doing to protect our water environment."
Rudy De Vis, Sales and Marketing Manager, Ecover

"The Marine Conservation Society are delighted to be the new Official Charity Partner of the Ecover Blue Mile. Being a part of the Blue Mile will help to raise much needed funds to protect our seas, shores and wildlife. We also want to encourage people to volunteer and take part in practical MCS initiatives such as Sea Champions, Beachwatch and Wildlife Sightings. This is a big commitment from Ecover and the Blue Mile team to bring about a better future for our seas and wildlife and we're excited about involving many hundreds of active people in helping to protect the beautiful sea playground that we all share."
Andy Bool, Head of Fundraising MCS

"We are thrilled that Ecover have agreed to extend their generous support of the Ecover Blue Mile and that we are joined today by the Marine Conservation Society as our new official charity partner. We want people to get outside and immerse themselves in our natural world and do more to look after our seas and wildlife."
Conrad Humphreys, Sport Environment:

MOTOR VESSEL DARA A GEMWORTH POLISHING

BY **ANDREW ROUGHTON**

The MV Dara was a British vessel built in Glasgow, Scotland in 1948. She predominately carried cargo, workers, and post-colonialists between the Indian Subcontinent and the Persian Gulf.

However, during one fateful journey on April 8th 1961, the Dara suffered a very heavy explosion between decks and the vessel caught fire. Some historians suggest that a bomb was planted by an Omani rebel, but neither the culprit nor the motive have been satisfactorily substantiated.

Regardless of the cause, one American and three British ships sent crew onboard to stop the fire and the British salvage vessel, the Ocean Salvor began towing the Dara to shore. However, three miles off the Trucial Coast, in the early hours of April 10th, the Dara sank. The death toll, for which the Dara has become infamous, was two-hundred and thirty-eight, which is the highest maritime loss of life, during peace time, behind the Titanic.

The wreck now lies in three main sections, at a depth of twenty-one meters, at 25°34'29"N; 55°27'58"E off the coast of Umm Al Quwain, United Arab Emirates. Divers can expect visibility between three and ten meters, a variety of South Arabian marine life, and sadly, a vast array of fishing nets and lines covering the ill-fated vessel.

Here you can see fish caught needlessly in forgotten fishing nets – suffering helplessly until they suffocate and die. Thankfully, Sharjah Wanderers British Sub Aqua Club (BSAC) has made great efforts to clear some of these nets so that the wreck is diver-friendly again. However, a lot more needs to be done to make this site fish-friendly again.

Not only do the nets cause a threat to the marine life, they can be dangerous for divers, they ruin the aesthetic of a wonderful wreck, and they symbolize a human need to deplete the ocean of all her resources. A comprehensive clean-up would thus demonstrate the diving community's desire to preserve a terrific ship wreck, diving in the UAE, and the oceans as a whole.

AL MARSA MUSANDAM

Al Marsa Musandam – the diving and cruising specialist – takes you into a breath taking world of marine life and nature with its privileged access into the Northern Hajjar mountain range, Ru'us al-Jibal with its awesome rugged 'Fjord-like' coastline known as the eastern Musandam peninsula. Our traditional dhows sail from Dibba, into the warm waters of the Omani sea and explore one of the wildest biodiversities of marine species that can be found anywhere in the world.

Just 120km away from Dubai, this majestic retreat is ideal for a short half-day excursion, longer full day trips and can extend to liveaboard stays on vessels fully equipped (including satellite communication) with air conditioned cabins, large open sun decks and freshly prepared meals by our onboard cooks. Enjoy the cruise and its extra activities including all facilities for diving, snorkelling, fishing, kayaking and swimming. Explore the local marine life and dive into the wonders of the sea guided by a professionally trained EFR/ PADI certified crew member who will mentor you through beginner classes to open water diving courses and grant you a certification upon completion.

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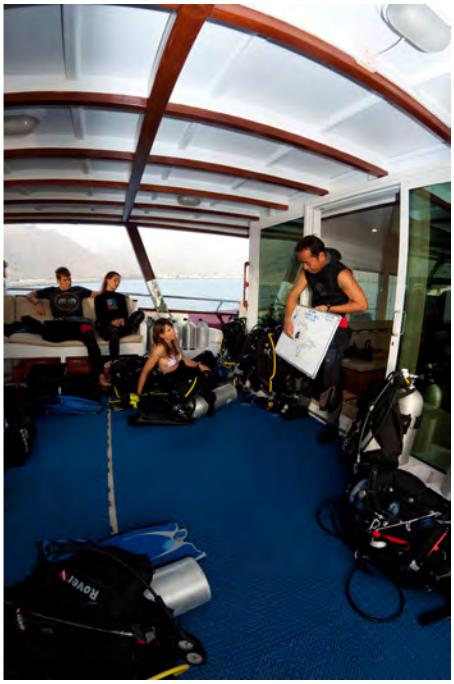


THE NEXT GENERATION OF ONLINE MARINE SCIENCE EDUCATION AND RESEARCH COMES TO DUBAI

FEATURE **CHAD H. KOLL** PHOTOGRAPHY **CHAD H. KOLL AND GRAHAM CASDEN**

On June 11th, 2013 the Emirates Academy of Hospitality will host Ocean Classrooms, an online marine science portal focusing on dynamic content, interactive delivery and experiential learning that brings the aquatic realm to your fingertips. Invitees include the Knowledge & Human Development Authority, the Tawasul network of schools and a number of aquariums from the Dubai region.

With the world population rapidly approaching seven billion people, the stress placed on our ocean ecosystems are greater than ever. As demands on these ecosystems increase, a need for new educational methods that reflect an increasingly internet-focused youth market is emerging. The team behind Ocean Classrooms recognized the value of an online gateway that allows individuals living thousands of kilometers from the ocean to participate in relevant, real-time marine science education with the ultimate goal of protecting the Earth's most valuable resource.

Ocean Classrooms understands that modern educational materials are constantly revised to accommodate new discoveries, insights and data. Traditional teaching methods and textbooks quickly become outdated as rapidly evolving information surpasses the ability of old-fashioned publishing companies to deliver updates, leaving students with insufficient training materials and a limited learning experience that doesn't meet the needs of today's educators.

Ocean Classrooms has created a suite of programs and teaching materials to meet these needs. Their premier product is Marine Science 101 (MS 101), a semester-length introductory science course that fulfills the Next Generation Science Standards of the United States and aligns with the National Curriculum of England. MS 101 introduces students to the marine world through narrative storylines, classroom labs utilizing real-time data, and relevant examples of scientific scenarios.

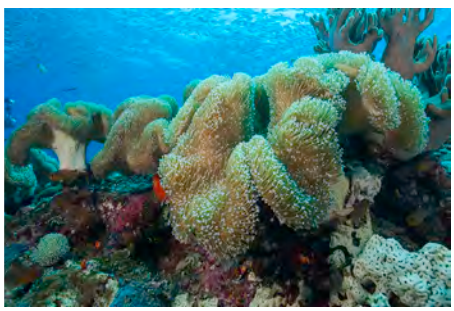
One of Ocean Classrooms' greatest strengths is the ability to create customized short courses. These courses can be developed to the customer's unique needs, fulfilling the requirements of specific science curricula. They can also be tailored to highlight an organization's strongest assets; for example a shark tank in an aquarium or a reef restoration project on a country's coast. To ensure the standard of quality necessary to maintain credibility within the scientific and academic communities, each of these customized short courses will meet or exceed the United States Next Generation Science Standards.

Training students using classroom materials is only one aspect of the Ocean Classrooms educational suite. To enhance the applied science portion of these courses and extend the learning experience beyond the classroom, Ocean Classrooms utilizes a proprietary system of underwater, high-definition webcams. These Blue Eyes™ systems allow teachers to integrate actual marine ecosystems into their curriculum to maximize their students' experiential learning opportunities.

These cameras are already providing high-definition feeds from locations in the British Virgin Islands, the Cayman Islands, and the Florida Keys in the United States. In addition to recording observations on reef structure, tidal and current conditions and fish behavior, students can collect data via an attached science node. This node records air and water temperature, salinity and pH levels. This information can be used in the associated labs and provides a non-invasive method of remotely tracking changes in ocean ecosystems.

Since the Blues Eyes™ camera technology was developed for deployment in remote marine environments; it provides a unique opportunity for companies with marine interests to have remote, non-invasive high-definition viewing capabilities. Currently these cameras are deployed to observe the development of sea-grass beds, monitor and evaluate the long-term viability of reef restoration projects and are recording the impact of the reintroduction of endemic species.

By creating a network of Blue Eyes™ science nodes, Ocean Classrooms is enabling enthusiasts in the dive, science, academic, and commercial industries to develop a community of like-



minded individuals who are able to monitor, evaluate and disseminate the data collected by these cameras through a variety of sources including academic and scientific journals, dive centers, social media and conservation and non-governmental organizations.

To encourage the growth of the community and encourage experiential learning, Ocean Classrooms has partnered with a United States non-profit called Teens4Oceans. Teens4Oceans balances the academic side of Ocean Classrooms by providing a network of chapters created by dedicated students, ages 11-18, in schools around the world that provide real-world experiences for their members.

Teens4Oceans chapters are student-led; under the oversight of an adult mentor, each chapter's young members create projects to promote marine conservation utilizing the particular strengths of the Ocean Classrooms model and the capabilities of the Blue Eyes™ science nodes. Students then participate in science-based expeditions that give them first-hand experience with the problems and possible solutions facing the marine environment today.

If you would like more information, please contact Ocean Classrooms' Director of Research and Education, Dr. Mikki McComb-Kobza at mikki@oceanclassrooms.com.

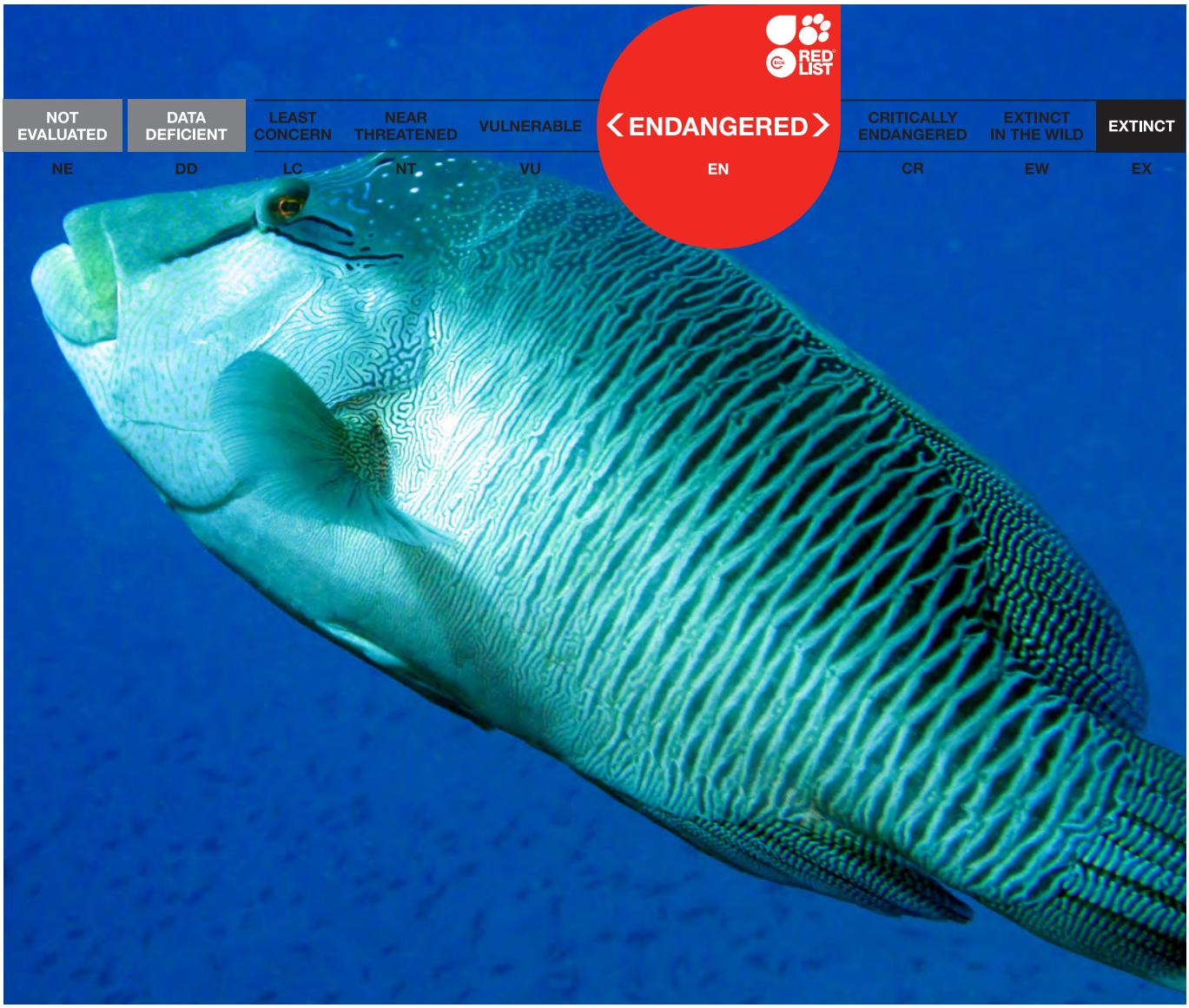
www.oceanclassrooms.com
www.teens4oceans.org

Email Ernst.vanderpoll@gmail.com to register for the workshop.

FEATURE CREATURE

HUMPHEAD WRASSE (*CHEILINUS UNDULATUS*)

FEATURE **IUCN RED LIST 2012.2 BY IUCN** PHOTOGRAPHY **STACY JUPITER/MARINE PHOTOBANK**



RED LIST CATEGORY & CRITERIA: ENDANGERED
Scientific Name: *Cheilinus undulatus*
Common Name: Humphead Wrasse

Justification: The Humphead Wrasse is widely distributed but is nowhere common, naturally. Densities rarely exceed 20 fish per hectare in the preferred habitats of outer reefs; more typically not more than 10. Wherever it is fished, even if only moderately, density quickly declines to 25% or less of peak densities recorded at no fishing – this is known from 24 different studies based on fishery-independent data from 11 range states. It appears to be extirpated from several edge of range locations. It is particularly heavily exploited (i.e., high levels of fishing pressure) at the centre of its range in southeastern Asia where its coral reef habitat is most abundant, and particularly in key supply countries for the live reef fish trade, Malaysia and Indonesia, and out of Palawan, its stronghold in the Philippines. In these countries all available fishery-dependent and trade-related data suggest declines over 10-15 years in exploited areas of 10-fold or more with fish now considered rare in areas where once it was common. Buyers of this fish are continually having to source new areas as numbers decline and the pattern of fishing reported is one typical of rapid serial depletions. Much of the capture in all major source countries for live fish are of small fish, mainly juveniles, according to all reliable accounts. Moreover, juveniles are the preferred size range for retailers of live Humphead Wrasse. Severe declines have also been noted nationally wherever the species is taken by speargun at night. Such is the concern for this species that it is one of the only reef fish protected by name (i.e., species name) across a range of countries. It is everywhere accessible to live fish catcher boats which can visit the most remote locations at will. Some spawning aggregations have been noted to decline or have disappeared in eastern Malaysia and Australia.

The total global catch of this species is estimated to be no more than 400mt annually, yet despite this low volume, severe declines are noted in all places for which data are available and occurring very soon after fishing begins, reducing numbers by more than 50% (see country accounts and summary table) (both fishery-dependent and fishery-independent) and where management is not

effective. Much of the trade is now in juvenile fish which is the preferred market size for live fish. It is severely reduced anywhere that it is fished unless a) it is effectively managed, b) there is no export trade or night spearfishing, and c) it is not included in marine protected areas. It is a species that appears to be highly conservation-dependent. There is no regional fishery management authority for this species and FAO does not collect data on it.

The listing of this species as Endangered is based on a population reduction of at least 50% over the last three generations (approximately 30 years) based on an index of abundance and actual or potential levels of exploitation. The declines are predicted to continue or even accelerate because of the likely growth of the live fish export trade.

This species can live at least 30 years (25 for males and 32 for females) and becomes sexually mature at six years. This means that its generation time is expected to be in the order of 10 years and that the rate of intrinsic population increase is likely to be low; natural predators are few and natural mortality rate was determined to be 0.14 or less. The species is particularly vulnerable because the bulk of the fishery for live fish, at least in east Malaysia, southwest Philippines and Indonesia (the major suppliers for the live reef fish trade and the centre of the species' range) is selective for juvenile sized fish since this is the preferred size class for consumers and gains the highest prices. This selective fishery for animals below but close to the size of sexual maturation has the potential to severely reduce the reproductive capability of exploited populations. The species cannot be artificially cultured (i.e., hatchery produced) to relieve fishing pressure.

The declines are projected to continue or worsen in key source countries for live fish because:

a) The species is one of the two most highly valued fish, economically, in the luxury live reef fish trade on a per kg basis;
b) Of the probable intrinsic vulnerability of such a large and long-lived reef fish, that is also hermaphroditic with relatively few adult males, and an aggregation-spawner, to overfishing; and
c) In places where the species has declined but is still actively sought, fishers only find a few fish a month or a year, at most;
d) The projected growth in the live fish trade, especially into mainland China in the next few years.

Finally, despite regulations in many places, there is much illegal, unregulated and unmonitored trade, according to many verbal accounts by fishers and traders and there is no regional management authority actively engaged in managing this small fishery and FAO does not collect data on it. It only remains abundant where protected or not fished at all. Protective legislation in most places appears to be ineffective.

Range description: The Humphead Wrasse is widely distributed on coral reefs and inshore habitats throughout much of the tropical Indo-Pacific, from western Indian Ocean and Red Sea to southern Japan, New Caledonia and into the central Pacific Ocean. In Australia, it occurs on offshore reefs of north-western Australia and the Great Barrier Reef. It is rare in the southern part of the Great Barrier Reef in the Capricorn-Bunker Group and at Middleton and Elizabeth Reef. This species appears to occur predominantly at depths of less than 100m. It is not known from the Hawaiian Islands, Johnston Island, Easter Island, Pitcairn Is., Rapa or Lord Howe Islands, Kermadec or Australes Is., and evidently does not occur in the Gulf of Oman, the Persian Gulf, Reunion Is., Mauritius or Rodrigues Is.

Adults are known to occur largely on outer reef areas, often in association with channels and passes. Spawning aggregation sites have been reported from outer reef areas.

Native: American Samoa (American Samoa); Australia (Ashmore-Cartier Is., Queensland); British Indian Ocean Territory (Chagos Archipelago); Cambodia; China; Christmas Island; Cocos (Keeling) Islands; Comoros; Cook Islands; Disputed Territory (Paracel Is., Spratly Is.); Djibouti; Egypt; Eritrea; Fiji; French Polynesia (Tuamotu); Guam; Hong Kong; India (Laccadive Is.); Indonesia; Israel; Japan (Nansei-shoto); Kenya; Kiribati (Gilbert Is., Kiribati Line Is.); Madagascar; Malaysia; Maldives; Marshall Islands; Mayotte; Micronesia, Federated States of; Mozambique; Myanmar; Nauru; New Caledonia; Niue; Northern Mariana Islands; Palau; Papua New Guinea; Philippines; Pitcairn; Samoa; Saudi Arabia; Seychelles; Singapore; Solomon Islands; Somalia; Sri Lanka; Sudan; Taiwan, Province of China; Tanzania, United Republic of; Thailand; Timor-Leste; Tokelau; Tonga; Tuvalu; United States Minor Outlying Islands (Wake Is.); Vanuatu; Viet Nam; Wallis and Futuna; Yemen

Population: Abundance estimates on northern Queensland (Australia) reefs are 2.5-3.5 adults per 8000m^2 .

There is no data on total numbers of this fish globally. However, adults are largely limited to outer reef areas which are a small proportion of the total reef area within its distribution and, even in preferred habitats, densities are very low for a commercially exploited species (rarely > 10 fish per 10,000 square meter when not fished). It is considered uncommon to rare naturally. Nothing is known about the extent of subpopulations or degree of fragmentation but available suitable habitat is a major determinant of its distribution. Some edge of range extirpations are suspected.

The species is hermaphroditic, changing sex from female to male. The sex ratio of samples and fish observed in the field is female biased. Under IUCN criteria for mature individuals, there should be a correction made to factor in the sex bias which effectively reduces substantially the estimates of fish numbers included in this assessment.

Population Trend: Decreasing

Habitat and Ecology: In one study, small post-settlement humphead wrasses were found in a species of seagrass (*Enhalys acoroides*), four species of hard coral (three *Acropora spp.* and *Porites cylindricus*), and in the soft coral *Sarcophyton sp.* After settlement, juveniles and adults live associated with reef or near-reef habitats of seagrass beds and mangrove areas, with juveniles typically inshore and the largest individuals found in deeper waters of outer reefs or lagoons. Juveniles of 3-20cm TL, and larger, occur in coral-rich areas of lagoon reefs, particularly among live thickets of staghorn, *Acropora spp.* corals, in seagrass beds, murky outer river areas with patch reefs, shallow sandy areas adjacent to coral reef lagoons, and mangrove and seagrass areas inshore. Recruitment patterns may vary considerably between years. Adults are more common offshore than inshore, their presumed preferred habitat being steep outer reef slopes, reef drop-offs, reef tops, channel slopes, reef passes, and lagoon reefs to at least 100m. They are usually found in association with well-developed coral reefs. Typically they are solitary or paired, but have also been noted in groups of 3-7 individuals. They appear to be somewhat sedentary in that the same individuals, identifiable by distinct natural markings, may be seen along the same stretch of reef for extended periods. Indeed, many commercial dive sites have their 'resident' Humphead Wrasse, a favoured species for divers. Natural densities are evidently never high, even in presumed preferred habitats. For example, in unfished or lightly fished areas, densities may range from two to rarely more than 10-20 individuals per 10,000m^2 of suitable reef. In fished areas, however, densities are typically lower by tenfold or more, and in some places fish no longer appear to be present.

Accounts of reproductive activity in the field reveal that, depending on location, this species spawns between several and all months of the year, in small or large groupings, that spawning coincides with certain phases of the tidal cycle, and that groups of spawning fish can form daily, at a range of different reef types. Spawning areas and aggregated adults have been noted regularly along specific sections of reef, sometimes associated with no obvious topographical features, sometimes close to the shelf edge on outer reefs, or adjacent to exposed reef passes near fairly steep drop-offs, or on mid-shelf (unspecified) reefs. The species is evidently a daily spawner that probably does not migrate far to its spawning

site(s), spawning for extended periods each year, i.e., a 'resident' spawner: groups of up to 150 fish were observed in Palau along the shelf edge in a loose aggregation.

Probable spawning aggregations have also been noted on Australia's Great Barrier Reef (GBR), Fiji, New Caledonia, and in the Solomon Islands. Although spawning was not always observed, aggregated fish were ripe, or exhibiting behaviour likely associated with spawning. On the GBR, aggregations of up to 10 large males and 20-50 smaller fish (35-95cm TL) were noted. GBR aggregations from the Ribbon Reefs and north of Jewell Reef, once noted to include hundreds of fish, are no longer known at the same sites.

The longevity of this species is up to at least 32 years, with females outliving the males (the oldest female recorded was 32 years), and sexual maturity is reached at about eight years of age. Histological studies show that sexual maturation is reached at a size of between 40cm and 60cm total length. This species is thought to be a protogynous hermaphrodite, with sex reversal occurring at about 15 years of age. At a total length of approximately 111cm. Males grow very rapidly.

It feeds on a variety of molluscs, fishes, sea urchins, crustaceans and other invertebrates.

Major Threat(s):

1) Intensive and species-specific removal for the live reef food fish export trade of a naturally uncommon and vulnerable species;
2) Readily accessible to spearfishing at night with SCUBA or hookah (i.e., compressed air) gear, and easy to catch with cyanide, or other poisons such as Derris trifoliata, due to predictable adult habitat and shallow depth range;
3) Lack of coordinated, consistent national and regional management largely due to limited management capacity and the sometime secretive nature of traders – in particular there is no relevant regional fishery management authority to address problems with this species;
4) Selective fishing, in particular the intensive take of juveniles for direct export sale and for grow-out (also referred to as 'culture' – the species cannot be hatchery reared; and
5) Illegal, unregulated, or unreported (IUU) fisheries.

In addition, the species' essential coral reef habitat is seriously threatened by human activity throughout the Indo-Pacific region. Destructive fishing practices, such as sodium cyanide use which stuns animals for capture and incidentally kills living coral, have been well documented and are spreading in the Indo-Pacific region. Despite its prohibition in many countries (including major exporters such as the Philippines and Indonesia), cyanide is still the preferred method for capturing certain live reef fish for international trade in some areas. Indeed, larger Humphead Wrasse are difficult to catch any other way, other than by night-time capture. When cyanide is applied, the fish often retreats into a crevice and becomes increasingly lethargic as the toxin reduces its ability to take up oxygen. Divers may break away the living coral to get access to the hiding area, and remove the fish to clean water where it will often recover for shipment or holding in net pens.

The most serious threat to this species is overfishing for the live fish export trade. They are mainly taken live for food – only rarely for the aquarium trade as far as can be determined. This species is long-lived and naturally uncommon, and if it is similar to other reef fish of similar size and biology (e.g., sequential hermaphroditism; aggregation-spawner) it is expected to have low rates of replacement and therefore be particularly vulnerable to fishing pressure. Moreover, being one of the largest of all reef fishes, they have few natural predators which means that fishing mortality may rapidly exceed natural mortality, possibly accounting for the rapid declines noted once fishing intensifies.

Although data are is available from throughout its range, wherever there are significant exports and no effective controls, fish numbers have declined substantially within a decade or less and exploitation rates are expected to continue, or more likely, intensify. There are few refuges for this species since live reef fish carriers have access to all reefs where it occurs and it does not extend into very deep water, probably little more than 60m. Adults only occur in reasonable numbers where the fishery is effectively managed or where they occur in marine protected areas.

There has been speculation that Humphead Wrasse, and other reef fishes, can be cultured or "farmed" to meet international demand. However, it appears that the use of cultured fish may actually pose a threat to wild populations in certain circumstances since it does not involve hatchery production (not yet possible for this species and unlikely to be possible at commercial levels for many years according to experienced aquarist M.A. Rimmer, pers. comm.) but the grow-out of wild sourced juveniles.

Conservation Actions:

AUSTRALIA

Western Australia – complete protection since May 1998 because stocks determined to be insufficient and susceptible to overfishing. From December 1st, 2003, Coral Reef Fin Fish Management Plan (for Queensland waters, including the Great Barrier Reef Marine Park) prohibited all take and possession of Humphead Wrasse, other than for limited educational purposes and public display.

CHINA

Permits are required for the sale of this species in Guangzhou province, southern mainland China – for conservation purposes.

INDONESIA

Fishing permitted if:

- Done by researcher (with research permit) for the purpose of scientific and mariculture development, as well as by artisanal fishers (with specific fishing permit).
- Allowable weights are 1 to 3kg. Fish with weight less than 1kg and more than 3kg should be used for mariculture and/or freed to nature.
- Allowable fishing methods for catching humphead wrasse are hook and line, fish trap and gill net.
- With regards to artisanal fishers involve in fisheries business partnership, the fishers should sell the fish to its collector partners.
- Collector and exporters should develop a rearing and culturing facility in the collection site which is equipped with staff knowledgeable in reef fish culture.
- Provincial Fisheries Services much monitor, control and report on permits and volumes 3-monthly but no data were available despite multiple queries and are apparently not collected.

MALDIVES

All exports of humphead wrasse were banned in 1995, largely due to concern for recreational diving, a sector that values this species.

NIUE

The interference, take, kill, or bringing to shore of the humphead wrasse is prohibited without written approval.

PALAU

Illegal to fish, buy or sell humphead wrasse < 64cm TL. Illegal to export humphead wrasse irrespective of size.

PAPUA NEW GUINEA

There is a 65cm minimum size limit for exporting Humphead Wrasse but this does not prevent fishers from catching and holding smaller Humphead Wrasse in cages (culturing) until they attain 65cm TL. All live fish operators are required to obtain licenses.

PHILIPPINES

Exports of all live fish are technically prohibited from throughout the Philippines but this part of the code is evidently not implemented. Until recently Humphead Wrasse could not be exported from Palawan with an exemption for the taking of small fish for mariculture. The Palawan regulation is pending reconsideration. There was much illegal movement of this species outside of Palawan for subsequent export.

This species is listed on CITES Appendix II.

Source: Russell, B. (Grouper & Wrasse Specialist Group) 2004. Cheilinus undulatus. **In:** IUCN 2012. IUCN Red List of Threatened Species. Version 2012.2. www.iucnredlist.org

MAKING THE MOST OF THE BLUE PLANET GENERATION

FEATURE **DANIEL EXTON**, OPERATION WALLACEA

Global threats such as ocean acidification, sea surface temperature increases and sea level rise have combined with more localised impacts including overfishing and pollution to make coral reefs one of the most threatened habitats on the planet

Coral reefs hold a certain fascination for divers. The warm clear waters and easy access make them the most popular destination for recreational diving, whilst the rainbow of colours and sheer volume of animals that make reefs their home have driven many an underwater photography enthusiast to obsession.

Even amongst scientists, renowned for their ability to find interest in the most unlikely of sources, coral reefs offer such a wealth of research potential covering a broad range of disciplines that they remain the focus of a host of academics the world over. However, recent years have seen a new type of diver emerge; one who wants more than just a chance to see a coral reef with their own eyes, and who feels empowered to make a difference in the growing struggle to protect these ecosystems for the future.

This group is formed from a new generation of teenagers and young adults, brought up on a diet of wildlife documentaries, who have developed a keen desire to experience the wonders on offer in the world's oceans. With developments in accessibility and budget travel opening up the tropics, once considered the realm of the wealthy, a large proportion of this group are choosing coral reefs to focus their attentions and considerable efforts on.

MARINE CONSERVATION

Fortunately, these developments have coincided with a call for greatly increased marine conservation efforts throughout the tropics, with some experts suggesting over one third of the oceans need protecting if we are to halt the steady decline towards extinctions and ecosystem loss. Global threats such as ocean acidification, sea surface temperature increases and sea level rise have combined with more localised impacts including overfishing and pollution to make coral reefs one of the most threatened habitats on the planet.

Widespread management is required, but success relies on large and detailed data sets being collected to highlight the major impacts at a particular site, as well as to monitor the success of management intervention.

The extent of areas requiring attention is now simply too much for the small pool of expert consultants and academics to cover. This demand for data has, however, provided the perfect opportunity for these young enthusiasts to contribute meaningfully towards improved conservation management.

But manpower is not the only consideration. A comprehensive coral reef monitoring programme is likely to set you back tens of thousands of dollars per year for even a small geographical area.

VOLUNTEERING

Traditionally, this has relied on significant funding from governments and NGOs, but their resources can only be expected to stretch so far, especially bearing in mind the recent global economic downturn.

The involvement of passionate young amateur conservationists through marine environmental volunteering also offers a solution to this problem by providing a sustainable funding stream to add to their considerable manpower.

When the added by-products of this volunteering model are considered, including increased environmental awareness, income to local communities outside the typical tourist route, and the development of the next generation of marine scientists and conservationists, the true value of this market can be truly appreciated. In short, it gives us the opportunity to achieve what the scientific community could never manage alone, and will have an important part to play in the coming battle to conserve the Earth's natural wonders.

Although the benefits brought by volunteering in terms of manpower and finances are unquestioned, their efforts have always been overshadowed by a widespread belief that data quality would undoubtedly suffer if the emphasis switches from highly experienced professionals to relatively inexperienced amateurs.

In some cases I would be forced to agree, but in my experience it is simply a question of research design. In the same way that a scientist will design an experiment based, in no small part, on the equipment available to them, volunteer organisations must tailor their efforts so they work to the strengths of the expertise they have at their disposal.

In this sense, the most important aspect of volunteer efforts is not the experience level of participants, but more the vision of those responsible for the design and implementation of data collection. In this way, a monitoring strategy developed by a core of experienced scientists, but utilising the manpower and enthusiasm of volunteers in a sensible way, can provide information on coral reefs which are extremely useful to conservation managers and researchers alike.

USE OF TECHNOLOGY

The emergence of technology as a tool in marine monitoring has added to the potential impact of volunteering, by addressing some of

the key concerns regarding the accuracy of data collected by individuals with only minimal training and experience.

The use of photography and videography in reef monitoring allows techniques to be more standardised, lets data be checked more thoroughly by those scientists responsible for volunteer supervision, and provides a permanent record of the reef that can be re-visited at a later date. Even more recent advances include the use of stereo-video technology to assess reef fisheries, providing data on biomass which was previously questionable at best, and utterly impossible using volunteer efforts alone.

In short, the 21st Century, although young, has already seen a change in the way people perceive the marine world and coral reefs in particular. Reefs are more accessible, meaning a greater number of people are able to enjoy them through recreation. But more importantly, they are providing a target for the passion of a generation with environmental awareness and protection one of their primary concerns.

If only a small percentage of those volunteering as teenagers and young adults choose conservation as a career, the future looks promising. Not many of these individuals return from volunteering unchanged though, with new perceptions of the world outside their comfort zone and the struggles facing large sections of the world's population, and this can only be good news for one of the planet's most threatened ecosystems.

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THE FISHERIES VALUE OF MANGROVES IN HONDURAS

FEATURE **JESSICA JAXION-HARM**, DEPARTMENT OF ZOOLOGY, UNIVERSITY OF OXFORD

Surveying mangroves in Honduras

Mangroves are thought to act as nurseries for many species of tropical fish

Mangroves may increase the abundance of coral-reef fish, according to a new study at Utila, Honduras. Fished species such as snappers, grunts, and barracudas use mangroves as juveniles before migrating to coral reefs as adults.

Mangroves are the predominant vegetative habitat found at the interface between sea and land of tropical and subtropical zones. Since 1980, 20% of the world's mangroves have been destroyed for land reclamation, shrimp aquaculture, and wood for fire and building materials (World Mangrove Atlas).

Two-thirds of the island of Utila (Bay Islands, Honduras, Central America) is covered by mangroves, but, as elsewhere in the world, these mangroves are currently being removed.

THE ROLE OF MANGROVES

Previous scientific studies have found that these trees are essential to reef health and coastal protection. In addition, mangroves are thought to act as nurseries for many species of tropical fish.

Nursery reef fish species require habitats other than coral reefs while in the juvenile stage. Red mangroves grow at the water's edge and their roots, which are used for support and oxygen transport, provide these fish with a complex spatial habitat that both attracts food and creates a refuge from predators.

SURVEYING FISH ABUNDANCE

Sampling and surveying were conducted on the surrounding reefs and mangroves of Utila, Bay Islands and the Cayos Cochinos Islands, Honduras in 2007 and 2008. Utila, which has 13 cays, is the southernmost island in the Bay Island archipelago and is located 29 km off the coast of Honduras. Utila is dominated by mangroves (nearly 66% coverage). The mangroves, Rhizophora mangle and Avicennia germinans, dominate two large lagoons on the south side and mangrove stands on the north side of the island.

Cayos Cochinos consists of Cayos Menor, Cayos Mejor and 13 smaller coral cays. The islands are located southeast of the Bay Islands, 18.5km from the mainland. In contrast to Utila, Cayos Cochinos has a distinct absence of mangrove lagoons and supports only two very small mangrove stands with lengths of 100 and 150 metres.

Coral reef surveys consisted of eight randomly selected 50m transects at each site (six sites per island) where fish abundances were recorded. To establish which coral-reef species use mangroves as a juvenile nursery (aka nursery species), nine mangrove sites were surveyed using 30m transects.

Of the 13 nursery species whose juveniles were found primarily in mangroves, eight had significantly higher abundances (denoted by asterisk on Figure 1) on mangrove-rich Utila's coral reefs. The remaining five species were also more abundant on Utila, but were not significantly so.

Some non-nursery adult fish species had higher abundances on Utila as well, but a larger percentage of nursery species than non-nursery species had higher abundances on Utila (see Figure 2).

Overall, coral-reef fish communities of the two islands were significantly different from each other. Therefore, this comparison between coral reefs off a mangrove-rich island and a mangrove-poor one indicates that mangroves may increase the abundance of nursery coral-reef fish, and adds one data point (island comparisons of fish nursery species) to a large scale graph of comparable matched-pairs

from previous studies.

CONFLICTS OF TOURISM

In 1993, Honduras recognised the importance of mangroves by signing the Ramsar Convention, an international treaty promoting the conservation of wetlands. Yet, many mangroves have been destroyed or are threatened with destruction on Utila as development stimulated by eco-tourism encroaches. The irony here is excruciating. Tourists are drawn to the Bay Islands to explore coral reefs, and yet, in decimating mangroves, tourism directly threatens the health of those reefs.

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RESEARCH NEEDS IN THE ARABIAN GULF CORAL REEFS: A SCIENTIFIC PUBLICATION

After presenting a poster in last year's conference, "Coral Reefs of the Gulf", EDA was invited to participate in the scientific paper, "Critical research needs for identifying future changes in Gulf coral reef ecosystems", which will be published in the next Gulf Special Issue of the Marine Pollution Bulletin. This article is a collaborative effort from scientists of seven different countries, and from 30 independent research institutes that have been conducting research in the Gulf.

The Arabian Gulf, due to its extreme environment with high salinity and high variability in annual seawater temperatures, has been receiving more attention by the scientific community. Understanding how the marine environment survives in such an environment will help to understand the potential adaptation, acclimation and resilience of reefs worldwide under climate change.

Coral reef studies conducted in the Arabian Gulf have been related to different areas, ranging from ecological to microbiological, or even abiotic, questions. This article lists the research areas and questions that are critical to understand future changes in the Arabian Gulf reef ecosystems. It also presents the strengths and weaknesses of the current research projects undergoing in the Arabian Gulf.

12 leading research areas in the Arabian Gulf were identified and are presented in order of importance, area considered the most relevant:

i. Biological and ecological processes structuring Gulf coral reef communities
ii. Climate change impacts on Gulf coral reef biology and ecology
iii. Anthropogenic activities structuring Gulf coral reef communities
iv. Monitoring and ecological surveys of coral reef community structure within the Gulf
v. Connectivity of Gulf coral reef communities
vi. Marine protected area development
vii. Abiotic interactions/factors structuring Gulf coral reef communities
viii. Coral reef restoration and management
ix. Oceanographic factors structuring Gulf coral reef communities
x. Economic evaluation of Gulf coral reef communities
xi. Evolution of Gulf coral reef communities
xii. Disease biology within Gulf coral reef communities

From these 12 areas of research within coral reefs, ten questions where highlighted as the most scientifically significant, as well as the ones that still show a gap in the actual research. These questions are not just relevant to the Arabian Gulf reef's research, but they are also consistent with what is considered globally important in coral reef resilience and conservation as well. What is the climate change impact on the Arabian Gulf biology and ecology? What is the connectivity between coral reef communities? What is the true economic value of the Arabian Gulf marine communities? These are just some of the questions that researchers pointed out.

In order to have an answer to all these key research questions and existing gaps, effective communication and collaboration among teams is needed. This will ensure that all areas of research are covered, and it will avoid redundancy. This article presents, in the discussion chapter, some key objectives that may improve the development of collaborative marine research within the Gulf.

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Critical research needs for identifying future changes in Gulf coral reef ecosystems

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ABSTRACT

Expert opinion was assessed to identify current knowledge gaps in determining future changes in Arabian/Persian Gulf (thereafter 'Gulf') coral reefs. Thirty-one participants submitted 71 research questions that were peer-assessed in terms of scientific importance (i.e., filled a knowledge gap and was a research priority) and efficiency in resource use (i.e., was highly feasible and ecologically broad). Ten research questions, in six major research areas, were highly important for both understanding Gulf coral reef ecosystems and also an efficient use of limited research resources. These questions mirrored global evaluations of the importance of understanding and evaluating biodiversity, determining the potential impacts

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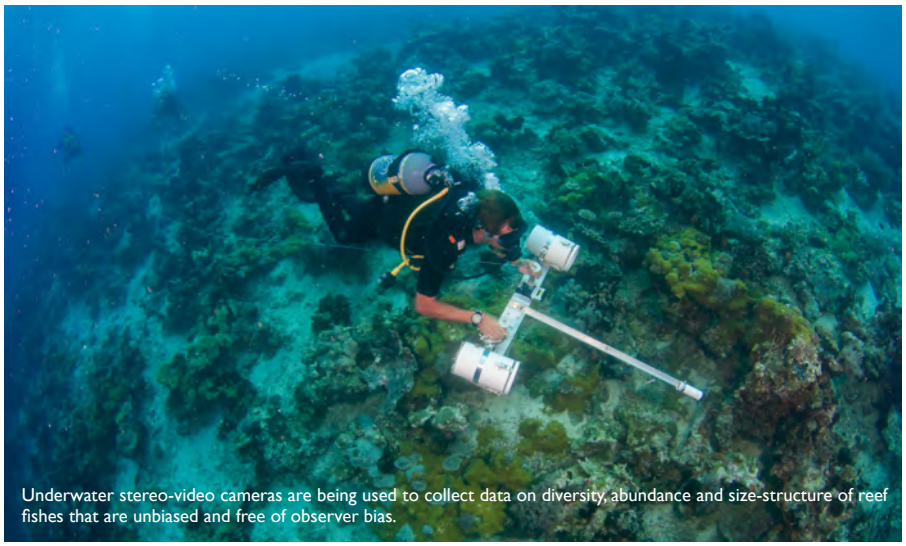
REEF SURVEY OF ENTIRE EAST AFRICAN COAST

FEATURE **DR CAINE DELACY**, UNIVERSITY OF WESTERN AUSTRALIA PHOTOGRAPHY **CAINE DELACY**



Underwater stereo-video cameras are being used to collect data on diversity, abundance and size-structure of reef fishes that are unbiased and free of observer bias.

An ambitious project to collect data on the reef fish community structure along the whole of East Africa's coast aims to provide a baseline understanding to underpin and inform future conservation efforts.

There is a global push for networks of marine protected areas (MPAs) as one ecosystem based mechanism of protecting marine biodiversity, reducing the impacts of overfishing, and to mitigate the effects of climate change. Early marine protected areas were placed largely in response to social or political pressures or knowledge of areas of high biodiversity or habitat complexity.

More recently, biological considerations have played a greater role, and systematic planning tools are frequently used to plan MPA networks (eg Great Barrier Reef Marine Park). Nonetheless, MPAs are generally a local-scale management tool irrespective of the conservation goal (an increase in biodiversity, biomass, fisheries via spill-over etc).

With the call to develop global, or continental scale networks of marine protected areas, very little consideration has been given to understanding the patterns and dynamics of communities at these large scales. However, it is the influence of biogeography and evolution and large-scale physical processes such as temperature and currents that determine species ranges, distribution, and abundance that essentially dictate the composition and structure of communities at local scales.

Given this, building a baseline understanding of the structure of communities along continental margins should be the first priority in pursuing large-scale networks of marine protected areas. Otherwise, for example, without this data, MPAs may fail to offer protection for restricted-range endemic species, or to protect areas of high biomass and low fishing efforts that may offer some of the last refuges of spawning stock to prevent fisheries from collapsing.

EAST AFRICA

The east coast of Africa is an important marine region that provides subsistence and economic resources to over 22 million people in Kenya, Tanzania and Mozambique. Here, reef fish resources are an important component of the economy and subsistence, and over the last 20 years some sites have shown a 40 % decline in reef fish resources. Yet the ecology of these reef fish communities along this coast are some of the least understood in the world, despite being some of the richest.

Governments have shown the foresight to protect marine biodiversity and conserve fisheries resources for future generations by establishing MPAs throughout the region, although improvements in management and the size and number of MPAs are needed.

To facilitate future MPA planning to protect reef fish resources, and to assess how current MPAs are performing in the context of a continental network, large-scale data on reef fish community dynamics and structure is required.

A multi-, large-scale approach is required for two reasons: 1) There are natural trends in the structure of marine fish assemblages along coastal/latitudinal gradients; 2) the history and pattern of human exploitation of coastal resources will differ within and between national boundaries.

Therefore, the goals of the research are to collect rigorous and unbiased data on reef fish community structures (abundance, diversity, size structure and biomass) along the entire east coast of Africa, focusing on multi-scale sampling régime that surveys reefs at regular intervals (100-200km, guided by satellite imagery from www.asclme.org, and local knowledge) and both inside and outside MPAs.

This will provide the means to comprehensively assess the status of these resources and human impacts and provide a basis for establishing an understanding influence of climate change along this coast. This cannot be achieved with the current knowledge base, or sampling programmes that are in place.

COLLECTING DATA

We are using underwater stereo-video to collect data on diversity, abundance and size-structure of reef fish that are unbiased and free of observer bias. This data is collected by scuba divers, collecting twelve 25m transects that are stratified by depth to a maximum depth of 25m. At each sampling site, benthic photoquadrats (for % cover) is also collected simultaneously. The survey design is based around a hierarchical design of multiple sites nested within locations at each point along the coast.

The proposed sampling region will cover 27° of latitude and will be expected to show significant variation in fish abundance patterns and species composition over this range driven by latitudinal temperate profiles, coastal geomorphology, biogeography and anthropogenic influences.

This variation will be enhanced by the action of the southwards flowing Agulhas current which will have the effect of extending the range of tropical species into the southern regions of the latitudinal gradient.

Importantly, capturing the range boundaries of tropical and endemic species, the location of such range boundaries and understanding the role of temperature in their determination will be an important aspect of the future response of coastal fish species to fishing pressure and climatic shifts.

The resultant database will provide a means to not only assess MPA performance and design, but can also be interrogated for biogeographic studies, and provide local and national governments with tools for planning at a local and national scale. These data sets are extremely rare or non-existent in marine conservation, and such data will be an invaluable resource.

We have just completed our journey and returned to our respective homes. A great and resounding success by the team to survey coral reefs along the entire east african coastline to Northern Kenya. Now begins the major task of video analysis, and data collection. We have lots to do, and are seeking support for this.

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NEW THREAT TO ENDANGERED SEA TURTLES

FEATURE **DR KATHY SLATER**, OPERATION WALLACEA

Rising beach temperatures are posing a new threat to endangered sea turtles. A successful conservation project in Mexico is now looking to widen its scope to monitor ambient temperatures in turtle nests.

All sea turtles in the Caribbean are listed by the IUCN (2012) as endangered (green turtle, *Chelonia mydas* and loggerhead turtle, *Caretta caretta*) or critically endangered (hawksbill turtle, *Eretmochelys imbricate*, and leatherback turtle, *Dermochelys coriacea*).

The major threat faced by these turtles is the loss of nesting habitats in coastal regions. The increasing popularity of the Mexican Riviera Maya as a tourist destination, and beach erosion (man-made and natural) has drastically reduced the number of suitable nesting sites for the turtles in the Yucatan Peninsula. Moreover, light pollution along the coastline from hotels, bars and restaurants has steadily reduced the number of turtles that come in to nest.

PROTECTING NESTING HABITATS

Sea turtles repeatedly return to the same beach to nest and provide no neonatal care once the eggs have hatched. Consequently, the characteristics of the nest determine whether the eggs will survive or not.

Placement of nests farther inland increases the likelihood of desiccation, and due to the distance the hatchlings have to travel to reach the sea, there is a greater chance that they will be preyed upon. Conversely, nests close to the sea increases the likelihood of egg loss due to erosion or flooding of the nest.

Nest site preferences of sea turtles therefore involve cost-benefit analyses by the females as they attempt to find the most suitable location to lay their eggs, and thus successful sea turtle conservation projects need to ensure that a wide range of potential nesting habitats are protected.

Three species can regularly be found around the popular tourist destination of Akumal in the Riviera Maya. The Hawksbill Turtle can be found feeding around the coral reefs just offshore and the local beaches are important nesting ground for the Loggerhead Turtle and the Green Turtle.

Although Akumal is also a popular tourist destination, the beaches are managed by a local NGO called Centro Ecológico Akumal. Daily patrols locate turtle nests and place protective barriers around them, and night patrols ensure that nesting turtles are not disturbed by tourists. Local residents have agreed to minimise light pollution by closing all shops, bars and restaurants before 11pm and local fishermen and tour boats abide by 'no go' areas in which areas of sea grasses are roped off so that feeding turtles will not be disturbed by boats.

The turtle monitoring team at CEA have also monitored the characteristics and success rates of nest sites in order to gather data on the range of habitats used by the turtles and ensure that they remain protected.

As a result of these efforts, the number of turtle nests and hatchlings are starting to increase over time, making the Akumal turtle project one of the few success stories in turtle conservation (see Figure 1).

CLIMATE CHANGE THREATS

However, the sea turtles appear to be facing a new threat in the form of changing beach temperatures caused by climate change. The sex of sea turtle hatchlings is determined by the temperature inside the nest. Embryos develop into males when the temperature is approximately 28°C (82°F), whereas the female embryo develops at approximately 31°C (88°F).

If the temperature inside the nest is between these values, then both male and female turtles are created. If temperatures at Caribbean beaches slowly increase in line with climate change, then this will lead to a serious reduction in male hatchlings.

If these endangered sea turtles are going to survive the long-term then not only do we need to protect their preferred nesting habitat, we also need to ensure that the potential nest sites have the correct temperature range.

Centro Ecologico Akumal and Operation Wallacea have now broadened the scope of the turtle nest monitoring project to include the placement of data loggers inside the nests in order to record ambient temperature during incubation. This data may then be matched to the nest site characteristics, hatchling success and sex ratios.

The team is currently raising funds to purchase a large number of data loggers to be used for the upcoming nesting season this summer.

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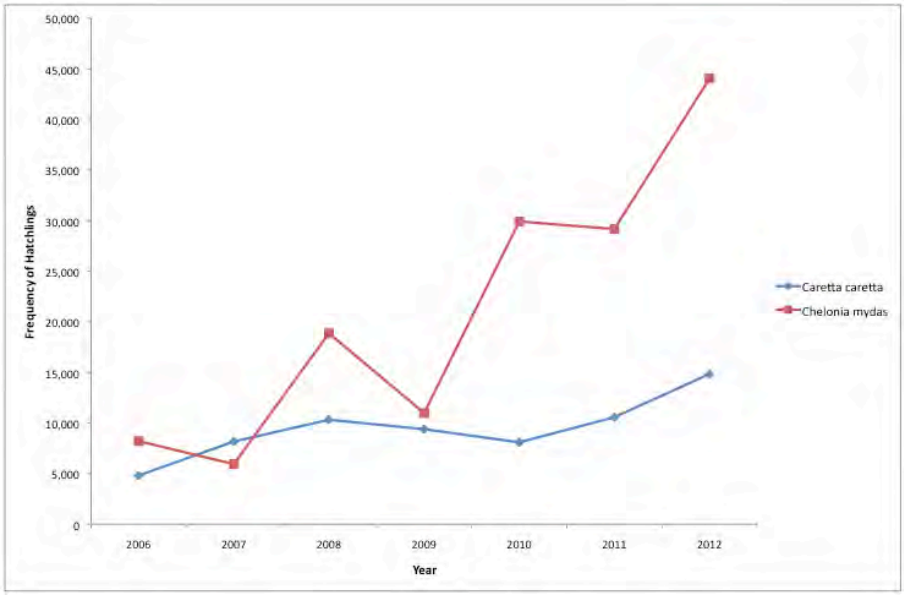
Turtle hatchling. Three species of turtle can regularly be found around the popular tourist destination of Akumal in the Riviera Maya.



MUSANDAM BIOSPHERE EXPEDITION:

STUDYING & PROTECTING THE UNIQUE CORAL REEFS OF THE MUSANDAM PENINSULA, OMAN

FEATURE **RITA BENTO**, EDA AND **MATTHIAS HAMMER**, BIOSPHERE EXPEDITIONS

The Musandam Peninsula, also known as Ru'us al-Jibal, is an exclave of Oman separated from Oman by the United Arab Emirates. It is situated on the Arabian Peninsula in the Strait of Hormuz, the narrow passage that links the Arabian Gulf and the Gulf of Oman. Corals from this region, where sea temperatures and salinity are high, are more resilient to those environmental parameters than corals in other parts of the world. Nevertheless recent studies suggest that any additional stress may lead to coral die-off.

Results from expedition show a promising, stable reef habitat in north Musandam since surveys began, in 2009. Slight increases in hard and soft coral cover, as well as high average coral coverage of 60%, well above the Indo-Pacific average of 22%, illustrate the presence in north Musandam of what can nowadays be considered atypically healthy reefs. However, results also show low numbers of some fish and invertebrate populations, most likely due to overexploitation. The stability of Musandam reefs is therefore not secure.

HOW WE DO IT

Biosphere Expeditions has been conducting surveys, using the internationally recognised Reef Check methodology, around the Musandam Peninsula since 2009, studying benthic and fish communities, and anthropogenic impacts. All the dive sites surveyed during the 2012 expedition were located in the North region of the Musandam Peninsula and included dive sites that are well-known diving spots regularly visited by divers, as well as areas that are known for their importance to fisheries. With all the dive sites located in the North area of Musandam we are able to compare changes that might exist since 2009 in this area of Musandam.

All data were collected by team members that passed through an intensive Reef Check training and testing procedure. The expedition team was recruited by Biosphere Expeditions and consisted of a mixture of all ages, backgrounds, and nationalities: Australia, Oman, USA, Finland, Germany, Portugal, and UK.

The Reef Check survey protocol utilises two transects at depths between 2-5 metres (shallow dive) and 6-12 metres (medium dive), chosen for practical reasons of dive duration and safety. Along each depth interval, shallow and medium, four 20 metre long line transects are surveyed with a 5 metre space interval between transects. The distance between the start of the first transect and end of the last transect is, therefore, 95 metres. In each transect, data regarding, fish, invertebrates, substrate and impact is collected.

Fish, invertebrates and substrate data were tested using one-way ANOVAs with post-hoc Tukey's test to assess differences in abundance between the past four years of surveys. Percentage cover data from the substrate survey were arcsine square-root transformed to improve normality and data from fish and invertebrate surveys were log10 transformed prior to analyses. For impacts, ordinal data, Kruskal-Wallis ANOVA test were used to assess differences between the four years of surveys.

WHAT WE SAW

Surveys since 2009 suggest that the reefs of the North Musandam peninsula are stable, with a slight increase in hard coral cover and soft corals. When compared with the majority of the reefs in the Indo-Pacific region, it is clear that Musandam has a high coral coverage of almost 60%, making the area a rarity. Researches in the Indo-Pacific – where 75% of the world's coral reefs are located – showed that the region's average of coral cover was merely 22.1%, and only 1.8% of 390 reefs surveyed had coral cover higher than 60%. The high hard coral coverage in Musandam not only shows how vital it is to protect this area, but also how these reefs, although located in an extreme marine environment, are resilient and able to succeed in such conditions. However, some fish families continue to display worryingly low numbers, with the butterflyfish family showing a decrease in the population.

Butterflyfish (*Chaetodontidae* family) are corallivores that predominately feed on individual coral polyps. In a healthy ecosystem, a balance between corallivore feeding intensity and coral regeneration has to exist so both populations can thrive. As butterflyfish only feed on the polyp, they only have a minor impact on coral growth. In general, coral cover correlates positively with the abundance of corallivores, and increases as corallivores increase. In north Musandam, our annual research expeditions show a steady growth in hard coral cover since 2009, indicating that the decrease seen in the butterflyfish population is probably not related to the decrease of food availability, but most probably to fishing, where normally species from this family are caught as bycatch.

Besides the changes in the butterflyfish population, there is still a worryingly low number of groupers and sweetlips. Many of the fish populations in the region are heavily fished, and concerns that fishing effort have exceeded optimum levels for most species are now receiving some attention from local communities. Fisheries that remove large individuals can easily erase all sexually mature fish and/or create a highly skewed sex ratio with the likelihood of reproductive failure. There is a strong need for conservation and management measures in this region, as well as more research in this field.

Previous studies conducted in Musandam have mentioned the issue of anthropogenic impacts in the region. Records of coral damage, pollution, and abandoned fishing equipment have been frequently reported in Musandam. Although most of the coral reefs in Musandam occur quite far away from populated areas, there is still some evidence of damage. The location of some of the sites studied makes them more protected, and impact level can be kept low. Nevertheless, the frequent level of fishing activity by the local community in Musandam makes underwater impacts related to fisheries a constant observation in coral reef environment. More patrolling and awareness in the region should be created, to prevent the increase of pollution and fisheries-related impacts

WHAT CAN BE DONE

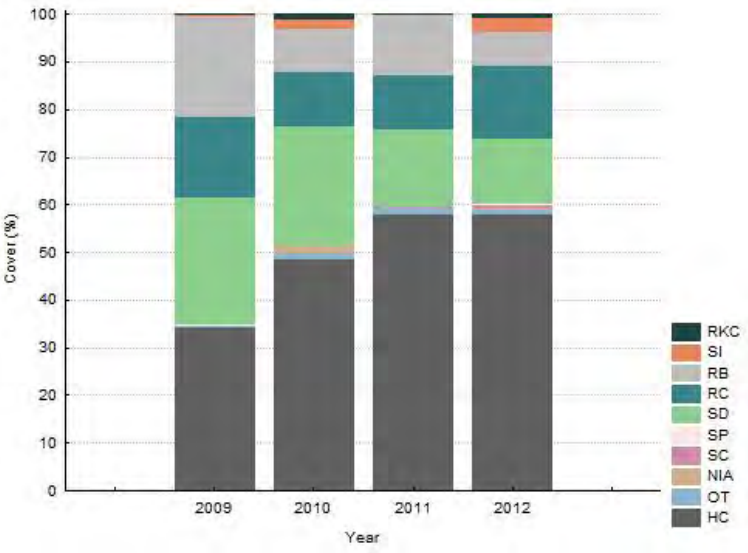
North Musandam doubtless harbours some of the best reefs of the region, but reefs with such high coral coverage are normally able to support fish populations greater than those observed. Musandam reefs, with the right protection, are able to support such healthy fish populations with appropriate age structures, and thus a source-sink systems for fisheries. Healthy reefs with stable fish and invertebrate populations improve the local economy, not only by supporting local artisan fisheries, but also other economies, such as tourism.

The time to act and make the area an MPA (marine protected area) is now, while the reefs can still support a diversity of organisms because of this number of fish and invertebrates are able to recover. If more habitat is lost or degraded before protection is implemented, there is a good chance that fish and invertebrate populations will not be able to recover from their current very low numbers and that the current high coral coverage will be lost. Also, changes in one of the low and potentially unstable population groups (such as groupers, for example) may, in future, result in critical changes in other groups, as well as in the whole ecosystem. As a result, the decrease in some fish and invertebrate families are likely to have future negative impacts on substrate composition and the reef ecosystem as a whole.

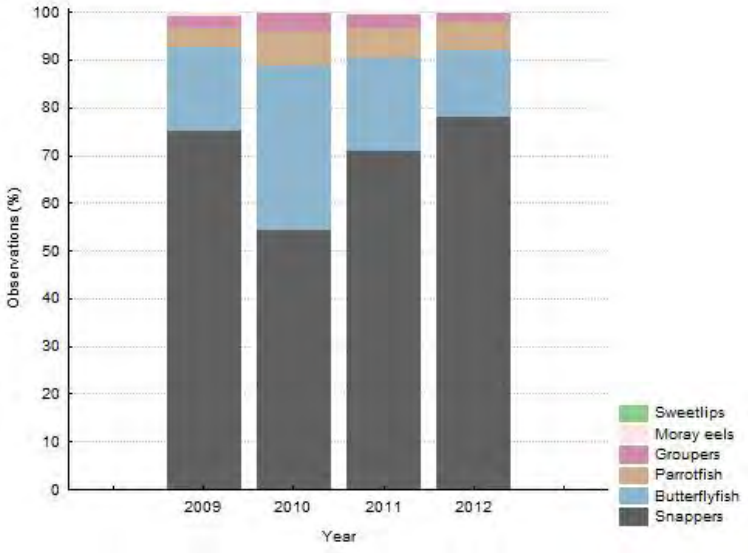
The implementation of one or more MPAs will help to mitigate the impacts of stresses found by the expedition, as well as create benefits such as (a) conserve biological diversity and associated ecosystems that cannot survive in most intensely managed seascapes; (b) promote natural age structures in populations, increasing fish catches locally (by protecting critical spawning and nursery habitats) and in surrounding fishing grounds; (c) provide shelter for species that cannot survive in areas that continue to be fished; (d) provide alternative incomes for local communities and alleviate poverty; (e) protect sensitive habitats from disturbances and damage from fishing gear; (f) eliminate "ghost fishing" by lost or discarded gear; (g) serve as point of reference of undisturbed control reference sites that can be used as a baseline for scientific research and also to determine fishery effects in other areas and thereby help to improve fisheries management, and (h) act as focal points for public education and awareness on marine ecosystems and human impacts upon them.

We therefore continue to recommend that a marine protected area (MPA), or a network of MPAs, is created in north Musandam. We also urge rapid action before what is at the moment still a unique natural treasure for Oman, is degraded and lost.

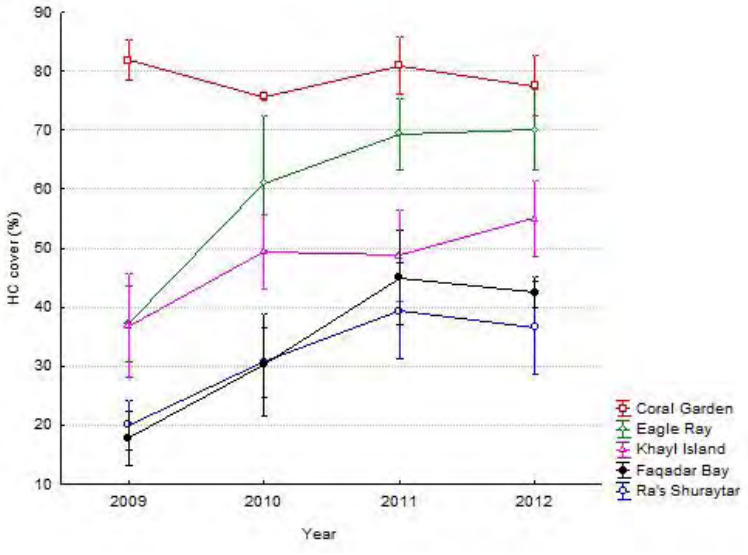
On this project, Biosphere Expeditions and Emirates Diving Association are working with Reef Check, local dive centres, businesses and resorts, the local community, Sultan Qaboos University, the Oman Ministry for Environment and Climate Affairs, the Oman Tourism Board, as well as the United Nations Environment Programme, the World Conservation Monitoring Centre and the International Coral Reef Action Network (ICRAN).



BENTHIC COMPOSITION: Benthic composition of north Musandam study sites, from 2009 to 2012. (HC= hard coral; SC= soft coral; SP= sponge; NIA= nutrient indicator algae; OT= others; RKC= recently killed coral; RC= rock; RB= rubble; SD= sand; SI= silt).



FISH: Composition of the total fish observations in north Musandam, from 2009 to 2012. Values presented in percentages. Note the very low grouper, parrotfish and moray eel presence



Coral: Mean hard coral (HC) percentage cover at the five sites studied in north Musandam from 2009 to 2012. Lines represent standard error.

PUTTING A VALUE ON CORAL REEFS

BY **REEF CHECK MALAYSIA**

Year	Source	Basis of estimate	Value (US$) (world)	Value of coral reefs in Malaysia (RM = Malaysian Ringgit)
2002	Burke, Selig and Spalding	Fisheries, shoreline protection, tourism, recreation, and aesthetic value	$23,100-270,000/km^2	RM 0.3 - 3.4 billion
2003	Cesar et al.	Fisheries, coastal protection, tourism/recreation and biodiversity value	$797.4 billion NPV (50yr, 3%)	RM 0.65 billion
2007	Martinez et al.	Human welfare	$172 billion/yr	RM 7.02 billion/yr
2009	TEEB (compilation of 83 studies)	Provisional, regulating, and cultural services	$115,704/ha/yr	RM 145 billion/yr
2009	TEEB Synthesis report	Annual benefits from restoring reef projects	$129,200/ha	RM 162 billion/ha
2010	NOAA (website)	Economic services - job, food, tourism	$375 billion/yr	RM 15.3 billion/yr

Coral reefs are highly productive ecosystems that thrive in what would otherwise be unproductive waters. They provide a number of services to human societies, including employment in tourism, food from the fisheries industry, coastal protection, as well as a way of life connected to traditional uses, to name a few. However, putting a value on these various "ecosystem services" is a difficult task, and without an understanding of the true value of coral reefs, it is difficult to make a case for improving management and conservation.

This article draws a comparison with an important industry sector in Malaysia: palm oil. It then presents various estimates of the value of coral reefs, some of which show that coral reefs may be worth more than the palm oil sector, and argues that such an economically important ecosystem deserves more attention from government to ensure its sustainability.

Malaysia is the second largest producer, and leading exporter of, palm oil. Malaysia's palm oil industry is recognized as a key economic growth driver in Malaysia. It was the second largest contributor to external trade in 2008 and employs some 570,000 people directly.

The palm oil industry is acknowledged as an important economic sector. It has enjoyed support from the Government since its economic potential was recognized in the 1960's, and Government policies have moved from import substitution initiatives to export-oriented diversification. The Government has created vital institutions, including the MPOB and MPOC, and has supported the industry through tax incentives, policy and trade promotion by MITI.

If the economic value of an industry sector can be used to assess its importance to the national economy and to justify government attention and support, then how do coral reefs compare to palm oil?

Putting a value on an industry like palm oil is relatively straightforward. Market capitalization of listed companies, employment and the value of exports can all be used as indicators of the economic value of the sector, and information is readily available.

In contrast, putting a value on an ecosystem like coral reefs is much more complicated. Coral reefs produce fewer "products", and methodologies to value coral reefs must rely on economic models to estimate the value of the ecosystem services they provide.

Over the last 10 years, methodologies have improved as the number of economists and scientists working on the problem has grown. The table below demonstrates the changing estimates of the value of reefs values over that period.

Clearly, an accurate economic valuation of coral reefs, or more precisely the ecosystem services they provide, is important to properly understand their economic importance.

The TEEB report was compiled by a large number of eminent scientists, so has high credibility. If the value of RM 145 billion per year for Malaysia proves to be accurate, then coral reef ecosystem services in Malaysia are valued at more than three times the export value of the palm oil industry and twice the market capitalisation of the palm oil industry.

These statistics support the argument that coral reefs should take their place high up in the ranking of important business sectors in Malaysia.

Coral reefs are a valuable economic resource, and, armed with this better understanding of their true value, it seems clear that protecting coral reefs should receive a higher priority than it currently does.

Two examples of the cost of coral reef degradation serve to reinforce this point.

TOURISM VALUE

Many of the islands off the East coast of Peninsular Malaysia are important tourist destinations. Today, many of them are a draw for divers and snorkelers, and the coral reefs around the islands can be considered to be a central element of the tourist product on the islands

The northernmost islands, the Perhentian islands, have seen rapid growth in tourism over the last 10 years, and visitor numbers continue to increase. Hand in hand with this has been an increase in the provision of facilities and services for tourists.

But growing tourist numbers are placing increasing stress on the coral reefs around the islands. Tourism impacts range from physical (divers and snorkelers damaging reefs) to biological (nutrient pollution from poorly treated sewage). The condition of reefs around the islands is declining: they have the lowest live coral cover of any of the islands off the East coast; and among the highest level of nutrient indicator algae (Reef Check Malaysia: "Status of Coral Reefs in Malaysia 2011").

Peninsular Malaysia has 25% of Malaysia's reefs (the majority are in East Malaysia,

mainly Sabah). Of this, we estimate that the Perhentian islands account for some 5% of Peninsular reefs. Based on a total value of coral reefs in Malaysia of RM 145 billion per annum (derived by TEEB for provisional, regulating, and cultural services), we estimate that the annual economic value of coral reefs around the Perhentian islands is RM 1.81 billion. Ironically, this value is under threat from the very people who travel to the islands to see the coral reefs, because of uncontrolled development and the poor quality of services such as waste management and sewage treatment.

FISHERIES VALUE

Fish bombing is still a commonly used fishing method in Sabah. Cheap, quick and easy, it uses home-made bombs (made from fertilizer and diesel) to stun and kill fish, which float to the surface or sink to the bottom, and are easy to gather.

Unfortunately, since bombing is usually practiced in shallow coastal waters, it invariably destroys the coral reef below the blast area. Once destroyed, such areas can take 25 years or more to recover their biodiversity and productivity. In 1999, Ismail et al estimated that, at the then rate of fish bombing, by 2020 an amount of reef equal to 130% of Sabah's reefs would be destroyed by fish bombing. Clearly this is impossible, but it does indicate the urgent need to address the problem.

Fish bombing is a serious economic issue. It is estimated that a single fish bomb creates a crater some 5m in diameter, with an area of 19.64m" (Ismail et al). Using the value of coral reefs of RM 145 billion per annum (RM 36.25 per m"), the cost (lost economic value) of a single bombed area can be calculated at RM 711.95, a cost far in excess of the value of the few kilograms of fish collected by the bomber.

In May 2011, Reef Check Malaysia started to gather data on fish bombing in Sabah, in an attempt to quantify the scale of the problem.

In the following 12 months, we received 103 reports on fish bombing, some reporting a single bomb blast, others reporting multiple bomb blasts. The total number of bomb blasts reported during the period was 166. At a cost of RM 711.95 per bomb blast, this suggests that the cost of the fish bombing reported to Reef Check Malaysia, in terms of lost reef value, is RM 118,183 over the 12 month period.

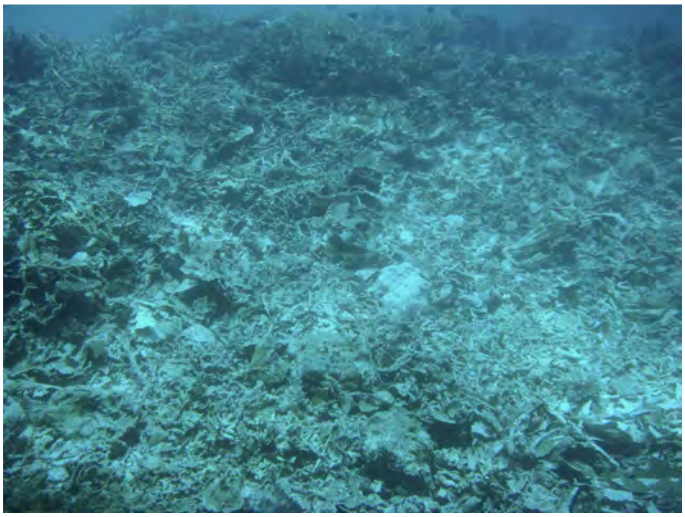
Most of the reports we receive originate from a small number of resort operators around the Semporna area. We suspect that these reports account for less than 1% of the true number of bomb blasts, putting a much higher "cost" on bombed areas of over RM 11 million per annum.

Investment in education and enforcement to protect this value will provide a significant economic payback.

When it was first established in 2007, Reef Check Malaysia commonly quoted a value for Malaysia's coral reefs of just RM 2 billion per annum, consistent with early estimates of global reef values. At this level, it is difficult to make a compelling financial argument to support coral reef conservation, particularly when compared to other industries of strategic importance (eg. oil palm).

However, it has become clear that this is a significant under-estimate. More recent estimates put the value of coral reefs in excess of oil palm exports.

We encourage the Malaysian government to revise its approach to coral reefs, viewing them as a strategic asset that underpin fisheries, tourism jobs and other intangible values such as coastal protection.



DEPLOYING TRANSECTS, HUNTING LIONFISH AND ESTABLISHING A CORAL NURSERY WITH REEF CHECK DR

BY **MATTHEW SCHUMM & BETH BEYER** – REEF CHECK DR VOLUNTEERS

This April, a team of families from Chicago, Illinois trained as EcoDiver volunteers and conducted research with Reef Check Dominican Republic. In preparation for the trip, the students studied extensively the cultural, political, and economic history of the Dominican Republic. Students also explored the biology of coral reef organisms, with older students taking the lead in developing study materials and teaching younger participants about the coral reef ecosystem. Students were able to learn more about marine science through participation in labs at the John G. Shedd Aquarium and opportunities to meet with postdoctoral researchers working at the Aquarium as part of their overall participation with the Coral Reef Regeneration project.

In addition to collecting Reef Check data on the health of the reefs at Parque Nacional Submarino La Caleta, the EcoDiver volunteers had an opportunity to work with Reef Check Dominican Republic's Dr. Ruben Torres to establish a "nursery" for staghorn Acropora coral. Coral fragments from the Silver Banks were carefully transported to La Caleta and transplanted into our nursery in hopes of saving and regenerating this coral for growth efforts in La Caleta and other regions around the Dominican Republic.

Populations of lionfish, a species invasive to the Caribbean, have grown unchecked in Dominican waters due to a lack of natural predation. Lionfish prey on a variety of ecologically and economically important reef fish, including the juveniles of parrotfish, damselfish and other herbivores that control reef algae. Our team of Reef Check EcoDivers had a chance to take part in a Lionfish tournament sponsored by Sea Savers Dominican Republic, a program facilitated by students from the Carol Morgan School of Santo Domingo. By capturing and eating lionfish, we made a small difference in protecting the health of the coral reefs in the Dominican Republic.

NEW BOOK ON HAITI REEFS BENEFITS REEF CHECK

Haiti From Below, a large format book by Nathalie Brunet and featuring gorgeous underwater photos by Naick Hobgood is the first book focusing on the beauty of the coral reefs of Haiti. The book, which comes packaged in a beautifully illustrated box case, features over 100 colorful pictures taken underwater along the northern coast of Haiti including fish, corals, sponges, fan worms, squid and other colorful reef creatures of the Caribbean. The pictures were taken between 2007 and 2010, in locations such as Baie de l'Acul, Cachal Beach, Caracol, Cormier, Fort Labouque, Fort Liberté, Isla Amiga, and Labadie. Nick Hobgood, a passionate diver/photographer who fell in love with Haiti "from below" while exploring the North coast, captured the beautiful images.

Reef Check assisted in the book production by providing scientific identifications of the marine organisms as well as habitat maps for the north coast bays showing the locations for coral reefs, mangroves and seagrass. Two pages in the back of the book also feature photos and text about the first EcoDiver team trained in Haiti by Reef Check. The book includes a discussion of the factors affecting reef status as well as an overview of the economic, social and cultural panorama. There are brief historical accounts of Christopher Columbus, whose boat the Santa Maria sank in Haiti, the Buccaneers whose name comes from Haiti ("Boucaniers"), as well as the pirates who buried treasure on Tortuga Island. The overall tone is a light, easy-read with text in both French and English.

The book is 9 x 12 inches with hard cover, printed in full color (hexachrome) on 142 pages of glossy paper. The goals of the book are to: raise awareness for the situation of coral reefs in Haiti and encourage a national action plan for their preservation, attract coastal tourism in Haiti, and to support the expansion of Reef Check's EcoDiver program in Haiti.

The authors have generously donated 100% of the proceeds of the first 250 books to Reef Check to support EcoDiver training on the north coast of Haiti.

REEF CHECK HONG KONG MARKS 15th ANNIVERSARY

BY **REEF CHECK HONG KONG**

Hong Kong's Agriculture, Fisheries and Conservation Department (AFCD) held a prize presentation ceremony in December to commend the work of Reef Check teams and their contributions to the success of Reef Check Hong Kong in 2012. The ceremony also marked the 15th anniversary of their annual survey. The AFCD has collaborated with the Foundation to conduct the survey since 2000.

The 2012 results showed that local corals are generally in a healthy and stable condition with high fauna diversity.

The 48 participating Reef Check teams were comprised of more than 570 volunteers from different sectors of the community, including education institutes, green groups, commercial sectors, government departments and diving groups. This is a 9-fold increase in volunteers in comparison to the number who participated in 1997, when there were only 5 teams.

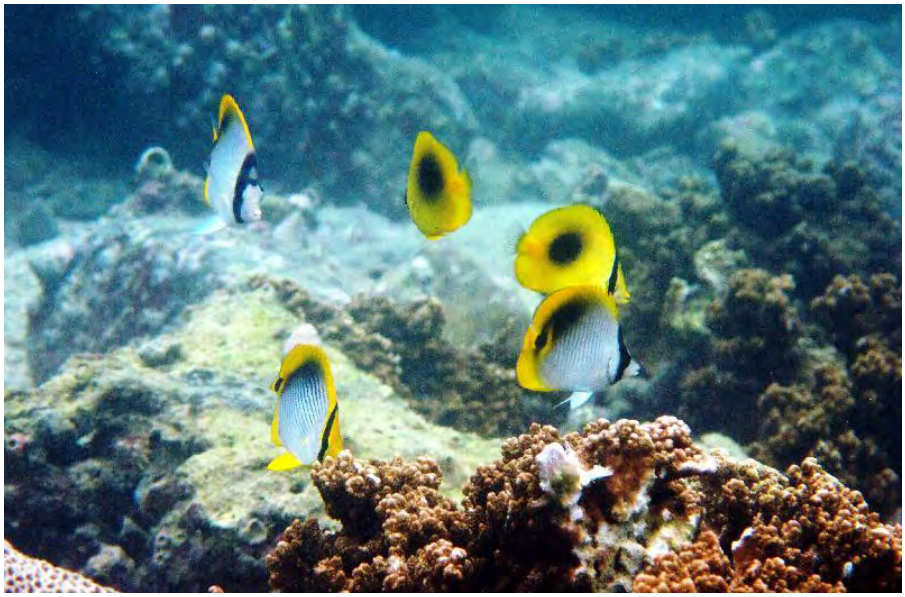
The areas surveyed are extensive, covering 33 sites of ecological importance. The four-month exercise started in June and covered coral sites in the eastern part of Hong Kong waters extending from Tung Ping Chau in the north to the Ninepin Group in the south, including three Marine Parks – Hoi Ha Wan, Yan Chau Tong and Tung Ping Chau.

A variation in coral coverage (ranging from 20% to 76.8%) was recorded among the survey sites. Nineteen sites, including dive sites within the three Marine Parks recorded high coral coverage (above 50%). Among all sites, Coral Beach of Hoi Ha Wan recorded the highest coral coverage of 76.8%. Coral bleaching and some coral damage were observed at a few sites but the impact was minor and localized.

Marker buoys were installed at Ung Kong Wan, Port Island and Sharp Island in 2002 for coral protection. Monitoring results from Reef Check indicate that there has been an overall improvement in cover coverage at these 3 sites following the installation of the buoys. This may have been related to the success of coral marker buoys and the continued efforts in education and publicity for coral conservation.

Indicator species were abundant at most of the survey sites and most sites boasted high species diversity. Wrasses, groupers, butterfly fish, sea urchins, sea cucumbers and cowries were species commonly found.

The AFCD will continue to organize Reef Check activities to collect important information necessary for devising conservation and management measures to protect the precious corals.



PADI SEAL TEAM DIVING ADVENTURES
WITH THE KIDS SCUBA CAMP MABUL SIPADAN, SABAH 2012

FEATURE AND PHOTOGRAPHY **SYED ABD RAHMAN**, FOUNDER, SCUBA EDUCATOR – KIDS SCUBA MALAYSIA

A team of young divers enjoyed their time at the recent Kids Scuba Camp event held at the Borneo Divers Mabul Resort, Sabah from 7-11th December 2012. The camp consisted of 12 lovely kids and teens from the PADI Seal Team and Junior Open Water, from the ages as young as 9 to 16. It was also the annual event for the Kids Scuba Camp and the PADI Seal Team group to get ready and gear up for their first encounter underwater in an open sea right off the Borneo Divers Resort Jetty. The dives were assisted by a team of 5 dive professionals from the Kids Scuba Team and Borneo Divers. The Seal Team kids were put into pairs for each instructor.

It was a well-organized function as the Kids Scuba Camp Mabul Sipadan 2012 was coordinated with the support and cooperation from Borneo Divers Mabul Resort, PADI Asia Pacific, Tourism Malaysia, SportDiving Magazine, DiveLog Australia and A&L Adventure & Leisure Sdn. Bhd. Departing from the picturesque Borneo Divers Resort Jetty, one of the pioneer resorts on Mabul Island, the speed boat loaded with the kids, their Instructors and parents passed the Mabul Village through a sparkling, calm sea for the 30 minute journey to the reknowned Sipadan Island. The scenery of turquoise, calm, blue waters is breathtaking on the way to the island with a promise of things to come. Arriving at the jetty built by Sabah Parks Authority on Sipadan Island, the first impression is that of the peace, tranquility and the balanced eco-system of the nature and marine environment and its surrounding beauty.

On arrival to the jetty, one of the kids saw a lone 4 foot Barracuda relaxing in the water's shallows. Overseeing all the eager kids look at a huge resident barracuda in awe at the shore line is a rewarding moment. Right after that, the kids went straight to the beach to enjoy the turquoise blue waters of the island. Sipadan Island boasts a tremendous diversity of marine life, living harmoniously within the coral and clownfish colonies. It reminds me how we ourselves, should appreciate life within a modern civilization and practice that in our everyday lives.

It was this PADI Seal Team's first encounter to enjoy and learn about the healthy marine life and understand how it all interacts together underwater. They got to see their first Clownfish, Jacks, Sharks, and great barracudas and learn how to master and control their buoyancy to fully enjoy this unique and educational experience. They slowly descended from shore to a depth of 3m to 5m to view the lively and beautiful corals in the protected Sabah Park. They got to catch a glimpse of Black Tip Sharks swimming past us and swam through schools of Jacks by the thousands. We later noticed a huge school of Barracudas circling near us in the shallow waters.

Excited about being so close to these sea creatures, we slowly moved over to a group of Clownfish hiding amongst the soft corals being buffeted by the sea's current. Shortly after there is a group of parrotfish feeding on coral.

The kids managed two dives in the day to a maximum depths of 5 meters in the vicinity of Sipadan Island, in addition to playing on the beach and squeezing in a quick lunch before going for their second dive.

There was a special graduation for the three boys, Syamil Addin –10, Syamil Imran – 9 and Syamil Irfan – 9 who were upgraded to PADI Master Seal Team Members by their instructor overseen by their proud parents during their surface Interval.

After all the fun and adventure dives had, it was time to head back to Mabul Island during the late afternoon and with all the exhaustion of a full day, everyone napped on the boat heading back to camp.

"The service and professionalism is all the way up there as one of the best dive trips organized by the Borneo Divers Team and undoubtedly the most well planned trip by the organizers of the Kids Scuba Team", said Dr. Khamsiah Muda, one of the parents accompanying her three sons, Syamil Addin, Syamil Imran and Syamil Irfan on the trip.

"Even the non-divers were not forgotten. Snorkeling or just lazing around kept everyone occupied. Mabul and Sipadan Island Sabah is a perfect destination for families with kids and teens who want to get away for a few days from the hectic city life. With the control of the quota in divers and snorkelers visiting the island, it really helps with the marine environment conservation and less stress on the reef environment becomes more evident."

Another parent accompanying his two sons, Mr Khoo said, "My two sons, Aloysius – 10 and Alexander – 12, truly enjoyed themselves at the camp. It was their first experience diving in the open water and Syed and his Kids Scuba team ensured that they were well taken care of. The camp not only taught them diving skills, but also taught them about underwater marine conservation and more importantly, strengthened the bond between father and sons. They also made new friends and can't wait for the next camp. As Aloysius exclaimed, "Daddy, I feel like I am in a huge aquarium!" – Thank you Kids Scuba."

The serene settings of Mabul Island where we stayed, over a truly fantastic sunset, brings another perfect day to an end. The hardest thing about Mabul and Sipadan Island during the Kids Scuba Camp is when we have to leave again. All too soon it is time to return home, leaving behind the perfect way to enjoy diving, marine educational experiences and the appreciation for marine life through one of the most reknowned diving spots in the world.

KIDS SCUBA CAMP
PADI Youth Diver Education Award Dive Center
E-mail: kidsscuba@yahoo.com
www.kidsscuba.com

CHINHOYI CAVES: DESTINATION UNKNOWN
AN EXHILARATING EXPEDITION TO 200M AND BEYOND

FEATURE **SAAD DAWOOD**

THE UAE COMPONENT OF THE ICCE TEAM: (From Left to Right) Samer Issa, Mikael Simonsen, Glenn Campbell, Alla Druhzynina, Simon Nadim, Thomas Moore and Nick Van Der Walt.

Sooner or later every diver arrives at a crossroad: Stay in your comfort zone… or push into new territory? For those who choose the path less travelled, the journey has just begun – now they will never stop exploring their limits. A lucky few will eventually be rewarded… with once-in-a-lifetime opportunities to go where no one has ever gone before.

The Chinhoyi Caves have been dived to 108m by technical divers in the past, but they are thought to be close to 200m in depth. No one knows for sure how deep or extensive the cave system really is because vast areas remain unexplored – unseen by human eyes. All that may change this summer when a determined group of divers will push into the unknown, perhaps even reaching the bottom!

Located in northern Zimbabwe, the Chinhoyi Caves were first documented in 1887 but have featured significantly in the area's history for centuries; at times in a rather macabre light. The site enjoyed status as a national monument before being declared a national park in 1955. The entire area was later re-developed as a recreational park in 1975 and is currently under management of the Zimbabwe Parks and Wildlife Management Authority.

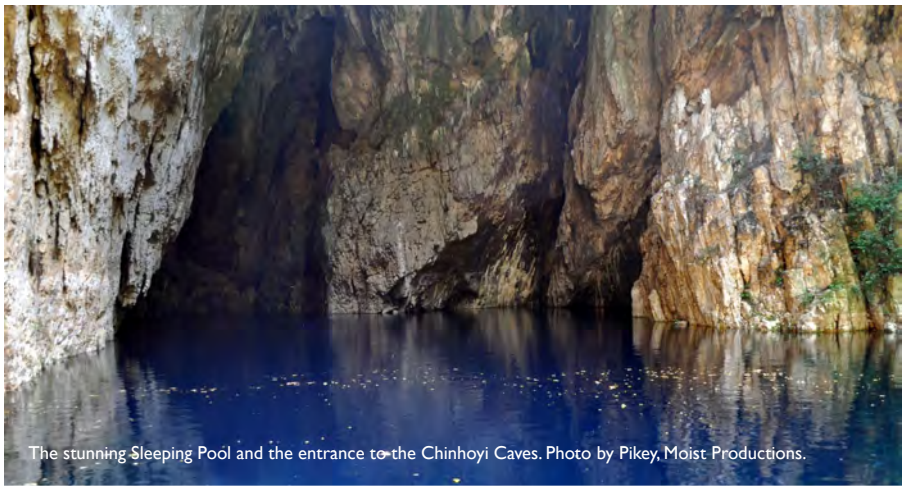
From a diving perspective, the Chinhoyi Caves are quite alluring. Visibility in the 50m range is regularly reported while water temperatures are 22 to 24 centigrade all year round. Entrance is via the Wonder Hole (a collapsed cavern) whose sheer 45m walls plunge straight into the Sleeping Pool – where the water is unbelievably blue, crystal clear and approximately 115m deep. Various underwater tunnels branch out from the Sleeping Pool, but those already explored all lead back to the Pool. There are also several underwater caverns, some of which have never been explored and thus offer the greatest potential for new discoveries – as well as the greatest risks for getting stuck or getting lost at unforgiving 200m depths.

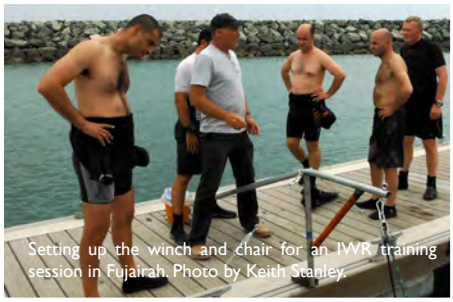
It takes time to put together the right team and then undertake the rigorous training which this kind of diving demands. The Internations Chinhoyi Cave Expedition is no exception and represents almost two years of planning, training and preparation. The team comprises of 12 highly experienced divers from nine different countries and is led by Glenn Campbell, a widely respected technical diving instructor and managing partner at Coastal Technical Divers in Fujairah.

As with all diving, a thorough risk assessment is vitally important. The site's remote location is a particular challenge in case divers need advanced medical support and life-saving hyperbaric (decompression) treatment. The expedition is using an in-water recompression (IWR) method developed by the Royal Australian Navy School of Underwater Medicine (RANSUM) and has worked with Divers Alert Network (DAN) South Africa to prepare ground-breaking medical protocols which include comprehensive IWR procedures. This aspect alone required extensive team training and the design/fabrication of a special winch-and-chair system to enable precise IWR for a stricken diver without exiting the Sleeping Pool.

In addition to safety and emergency training, the team has worked on building depth experience whilst also perfecting underwater communication and task coordination. Extreme cave diving of this nature is better suited to rebreathers (CCR) rather than open-circuit (OC), and over the last year OC members of the team have made the conversion and become thoroughly proficient in deep CCR diving.

In particular, the two lead divers (Glenn and Simon) who will attempt the deepest sections of the expedition have both reinforced their depth experience with several 115m and


The stunning Sleeping Pool and the entrance to the Chinhoyi Caves. Photo by Pikey, Moist Productions.


Setting up the winch and chair for an IWR training session in Fujairah. Photo by Keith Stanley.


IWR training scenarios with multiple support divers. Photo by Keith Stanley.


The tricky and steep climb down to the entrance of the Sleeping Pool. Photo by Pikey, Moist Productions.


Extensive rebreather training and emergency drills at deep depths.

160m dives at different sites in the UAE and Lebanon over the last year. Glenn has also perfected a technique for discarding a malfunctioning rebreather and switching to a spare unit whilst at depth – in less than 40 seconds!

Additionally the team has received formal training in cave surveying techniques and will carry specialised equipment to accurately measure and document their findings. This is a core component of the expedition's objectives: To survey the Chinhoyi Caves and provide scientific data which will help understand the area's water table and estimate the volume of freshwater available, in addition to a general environmental and ecosystem survey.

Since most of the divers are based in the UAE, a substantial logistic effort is required to safely transport approximately 1.5 tonnes of equipment to Zimbabwe and finally to the dive site. If that sounds like a lot of dive gear for such a small team, consider that they will be diving almost every day for two weeks from a remote location. The equipment required for this kind of expedition includes heavy diver propulsion vehicles (DPVs), full-face masks with communication modules, heavy-duty dive lights, ropes and cables, the complete IWR system, rebreathers and CO2 absorbent (lots of it!), dive cylinders, air compressors, gas blending equipment and so on. This is in addition to the support and infrastructure they will receive from Zimbabwe National Parks, the National Police Force and the Ministry of Tourism.

The Internations Chinhoyi Cave Expedition plans to be onsite by June 21st. A demanding 16-day schedule is set, going deeper and further each day while collecting survey data, and then the final exhilarating push into the complete unknown. Equipped with mobile data terminals, the team expects to make regular updates each evening. You can follow their progress and be among the first to see exciting footage from deep inside the Chinhoyi Caves – just visit http://coastaltechnicaldivers.com/icce/ for the latest news. Meanwhile, the September issue of 'Divers for the Environment' will report on the expedition's success and its findings. Stay tuned!

INTERNATIONS CHINHOYI CAVE EXPEDITION

UAE DOLPHIN PROJECT – UPDATE

FIRST "REPORT A SIGHTING" RESULTS: THE PUBLIC CAN MAKE A DIFFERENCE!

FEATURE AND PHOTOGRAPHY **ADA NATOLI**

PLEASE BE DOLPHIN SMART!

Report a sighting and demonstrate your support for dolphin conservation.

- "S stay back 50 metres from dolphins (100m from whales).
- "M move away cautiously if dolphins/whales show signs of disturbance (sudden change in behavior).
- "A always put your engine in neutral when dolphins/whales are near.
- "R refrain from feeding, touching, or swimming with wild dolphins.
- "T teach others to be Dolphin SMART.

Be dolphin SMART code is based on international guidelines. Contents and design have been adopted from the Ionian Dolphin Project (Tethys Research Institute)

It has been three exciting months for the UAE Dolphin Project since its debut in 'Divers for the Environment' last March! We have been concentrating our efforts in raising public awareness. We participated in two great events, the Dubai International Boat Show and the first Dubai Marine and Heritage Festival, and engaged students of all ages through school presentations: now over 500 students across seven schools in Dubai know more about dolphins and whales and more importantly that dolphins also appear in Dubai waters!

We have received an encouraging number of sightings and our sighting map is filling up. Someone diligently kept records of past sightings as far back as 2008 and kindly agreed to share them with us. Interestingly since the middle of March, we received 19 sightings that mean more than 2 sightings in a week! The real number is actually higher as some sightings have only been reported by word of mouth, with limited data and was not submitted through our system.

The main locations where dolphins have been reported are close to shore: in Dubai between the Palm Jumeirah and JBR, along Jumeirah beach and in Abu Dhabi along the corniche. We also received sightings from the western region, around Abu Al Abyadh Island and sadly a worrying number of finless porpoise strandings from Kuwait (three since January). The finless porpoise is a very elusive species poorly studied worldwide, although defined as "Vulnerable" by the IUCN Red List. We are aware that this species also occurs in UAE waters as sightings and strandings have been reported.

Reported sightings are extremely useful information. Dolphins' coastal occurrences can simply be the result of the fact that people mostly frequent these areas rather than more offshore areas, however if dolphins are seen, it means that they actually use these coastal waters fairly regularly.

As we are planning to soon start a research survey to gather a better estimate of the population size, habitat use, and seasonality of these species, the data will provide us the baseline information to better define the study area. Also, it enables us to understand where dolphins occur on a larger geographical scale and potentially to track animal movements.

Pictures are extremely useful even if of low quality. Firstly they enable us to confirm the species and furthermore, if the dolphin is clearly marked, and pictures are taken from the correct angle, they allow us to recognise a single individual from cuts and notches on their dorsal fins. This is the principle of photo-identification that scientists use for the different species such as whale sharks, zebras, and leopards. The analysis of photo-identification data systematically collected provides information on whether a population is resident or migratory, its social structure, and helps estimate the population size. If you have any pictures of dolphins taken in the past and you can retrieve the date, approximate location and time, please submit them!

We believe that dive professionals and dive centres are amongst those that can greatly contribute to this research. We produced a simple booklet, freely downloadable from our website (www.uaedolphinproject.org) that shows how to recognise the three most frequent species, how to safely enjoy a dolphin encounter and how to report a sighting. If any dive centre is interested, please contact us at sighting@uaedolphinproject.org – we will be happy to come in and give an introductory talk about whales, dolphins, more detailed information about the project and provide you with an illustrative poster and stickers for display.

We would like to thank all the people that submitted their sightings, in particular Nautica and Abu Dhabi Marine Conservation Society for sending their whole dataset, and Anand, Hessa and Zainab from Kuwait. The Pavilion Diving Centre, the Dubai Dolphinarium and the Diving Village for supporting our participation to events.

If you encounter – dead or alive – a dolphin or whale, please Report Your Sighting at www.uaedolphinproject.org!

Alternatively you can text +971 56 671 7164 or email your information to sighting@uaedolphinproject.org and/or post it on the project's Facebook or Twitter pages. Please make sure to note the date, time, location and include any images you may have of the encounter.

Photo-identification: adult dolphins often exhibit permanent cuts and notches on their dorsal fin that enable to univocally recognize the individual. Good photo-identification pictures are taken perpendicularly to the dorsal fin.

DOES NITROX PREVENT DEPTH NARCOSIS?

FEATURE **PATRICK VAN HOESERLANDE, LEENTJE VERVOORT** AND **KIKI VLEESCHOUWERS**

'Do not believe everything they tell you', is a healthy and scientific attitude. In our first article of the series 'tested and proven', we showed that depth intoxication at 30m has a negative effect on our ability to think. Depth makes us think slower and makes us more prone to error. Neither experience, nor sex protects us from it. Depth has the same consequences for divers as for instructors, and for women as for men! Nothing to do against it!

Nothing? I hear you think: what about Nitrox? That was our reaction too. Doesn't the specialty Nitrox diver handbook enumerate this reduced influence of nitrogen as one of the benefits? But is this really true? Are we really less intoxicated? Or do we just feel better because of the extra oxygen? This question was worth an experiment.

Time to call up the Experimental Deep Dive Team. Kiki Vleeschouwers, psychologist Leentje Vervoort and I just adapted our proven test design a little bit – a group of divers performing comparable intelligence tests on 2.5m and 35m. Again we chose the deepest swimming pool in the world, because in open water there would be other factors such as darkness, dust, cold…influencing the results. If we wanted to measure the positive effects of Nitrox on nitrogen intoxication, we had to keep all the other variables constant and that is very difficult to open water. In addition, a pool with spring water offered the possibility to organize everything in one evening and to better control the procedure. Being able to take beautiful pictures and a movie, was a nice added bonus.

With our experiment, we wanted to show (or contradict if necessary) the effects of depth while using Nitrox versus air, as well as some 'sensory factors' such as cold, clarity of thought, ease of breathing, etc. We didn't want to investigate other phenomena such as non-psychological advantages and disadvantages (such as reducing decompression accidents, extend the bottom time in relation to decompression…) nor the effects of oxygen toxicity. Testing these was far beyond our capabilities.

For the intelligence tests we could again cooperate with Mensa, the society for people with high IQ. We also added our own memory test in the form of imaginary fish. This memory test simulated the situation whereby a diver would discover an unknown fish and try to memorize it. Once back at the surface, he tries through the recollection of the characteristics to determine the fish with the aid of a specialized book. To be sure that no diver would recognize even the most exotic fish, we created two new, imaginary species.

The design was similar to that of our previous experiment on depth narcosis and consists of comparing the results of equivalent intelligence (i.e. Mensa) and memory tests made at a depth of 2.5m and 35m. In addition to make good use of the experience we had with this kind of setup, was the ability to confirm the results of our first experiment. The intelligence tests consisted in giving as many possible correct answers in a 7 minute period. The clear and warm spring water of Nemo 33 ensures that the conditions in terms of light, temperature, …on both depths are almost equal. Only the pressure is different. The difference with the last experiment was the gas mixtures. It was a so-called blind test. The divers didn't know the gas mixture (air or Nitrox) in their tank. They got a numbered bottle, which didn't mention the mixture inside (every tank was Nitrox approved). In addition, we've made them believe they were all diving with one of the possible, safe combinations of Nitrox, while in reality half the bottles were filled with air, the other half with Nitrox 32.

This blind test, however, meant a deviation from one of the basic security rules of Nitrox diving, that every self-respecting Nitrox diver should analyze his own mixture. However, this was a necessary deviation given the experiment.

Again, we could count on the logistical support of the local dive shop Scuba Service Store.

Another difference with the first experiment was the additional questionnaire that gauged the 'sensory factors' (supposed advantages and disadvantages of Nitrox). Hereby we let the divers believe they had been diving with a mixture. The last question was if they could guess the kind of Nitrox they had been diving with.

On the evening of the experiment, although there were 3 divers we had to replace because of illness, 16 divers, of which 8 experienced Nitrox instructors and divers and 8 novice Nitrox divers, were ready. All had previously been diving to 30m or more. To exclude the impact of nitrogen habituation, if that should exist, none of them had been diving the week before. It was also an international group: five very enthusiastic Dutch divers were also present. It was not easy to find enough Nitrox test divers in Flanders, but thanks to this international flavor we had our 16.

After the necessary administration (correct certification? how many dives? how many to 30m?…) the entire team was briefed and the whole procedure 'dry' practiced. The few visitors at the divers café looked pretty baffled while watching our dry run, but it was no luxury. There were plenty of questions that couldn't be answered under water. Underwater communication in unforeseen circumstances is difficult at least, and I, as dive leader at 35m, could be 'under the influence' too!

After the safety briefing, we had the mandatory 10-minute free diving session. The preparation of the material turned into a big confusion. This resulted in a very late start. The descent of the first team was not so smooth and troubleshooting at depth still proves very difficult. I saw my 'no deco' time counting down. My first deco stage appeared half way on the first session.

When I saw the second team coming down, it became clear to me that I would never end this experiment within the foreseen, and paid, hour. Thanks to the Nitrox in my bottle – at least I thought so at that time – I could think clearly about the problem at hand. Breaking up meant a total failure of the experiment combined with a great uncertainty about a possible second chance. So I decided to continue. My decision, however, meant that the last divers, including me, would come out of the water much later than agreed on.

After the wet part, it was now time for the dry part. The test divers still had to write down what they remembered from the imaginary fish and to answer some questions about Nitrox. The evening ended with a short debriefing and a cozy chat about the experiment and about diving.

While we agree how everyone could receive the pictures and the movie, I already started to go through the questions. Would they have guessed the mixture they had been diving with? Did Nitrox let us think clearer at depth? Or was that only an imaginary feeling? And what about the effect on memory recollection? Would the divers with Nitrox have remembered more than the air divers?

THE SCIENTIFIC SIDE OF THE EXPERIMENT

Would the divers be able to guess what mixture they had been diving with?

To find out, we let the participants indicate what mixture they thought to have been diving on (air, Nitrox 26, Nitrox 28, Nitrox 30 or Nitrox 32). The air divers had some difficulty with this question: one air diver thought – wrongly – to have dived with Nitrox 28 while two others indicated that they had no idea. For the Nitrox divers, however, it was very clear: they all correctly indicated that they had been diving with a Nitrox mixture. We have no idea on what this judgment was based on, because they all, just as the air divers, noted no difference between this dive and their last air dive, and despite this, the ideal circumstances of Nemo 33 (nice and warm, clear water, no current…).

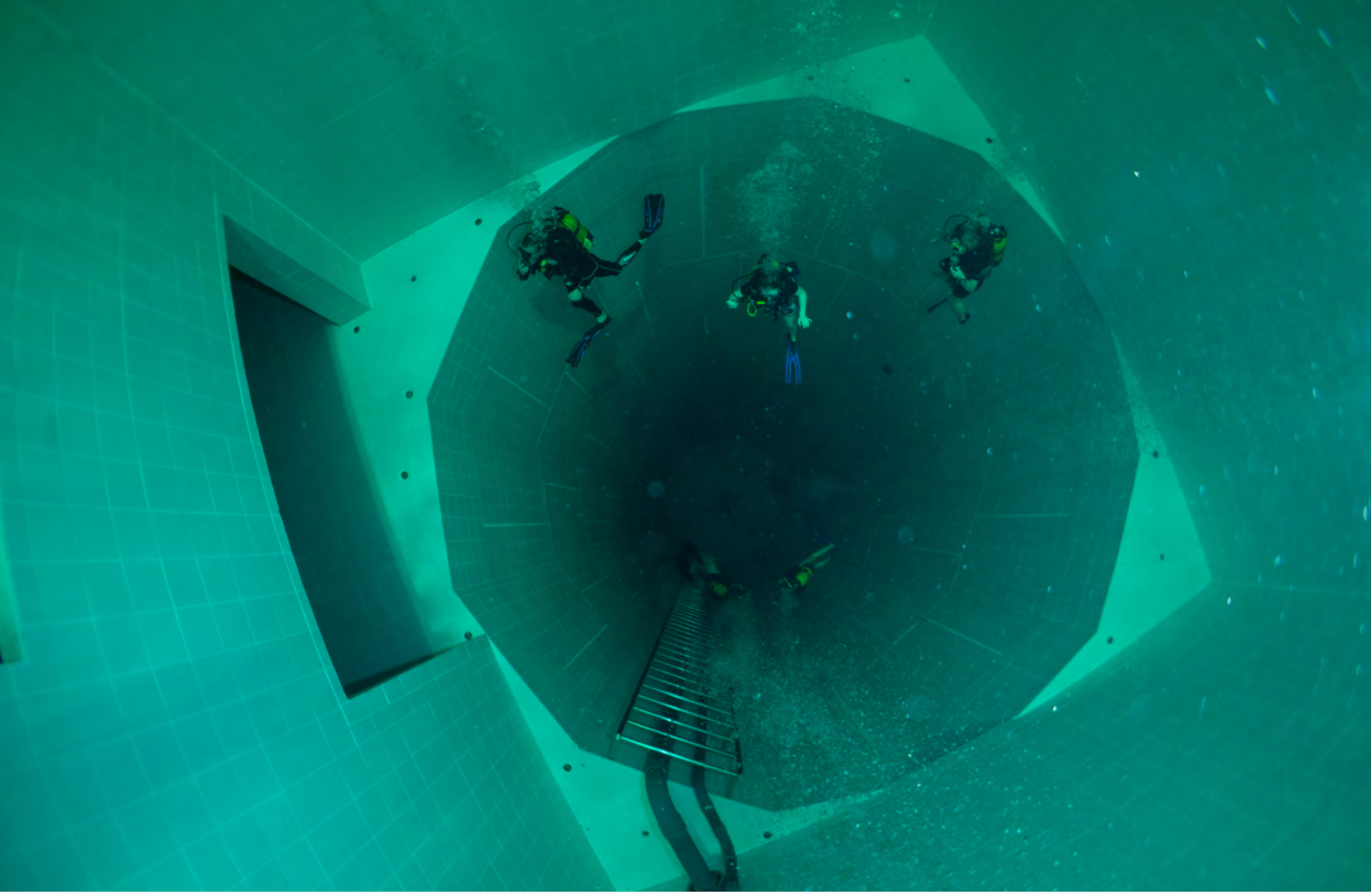
One Nitrox diver got it really hot, while one air diver and one Nitrox diver thought it was a lot hotter than their previous dive, but for the others there was no difference with the previous dive. One even indicated that it was chilly. He had probably just returned from a tropical dive. One air diver and two Nitrox divers wrote down that they were less thirsty than after the previous air dive, but the others mentioned no difference. Only two Nitrox divers and one air diver indicated they had experienced greater breathing resistance than during their previous air dive. One of them noted that this probably had to do with the use of another regulator.

Although most divers indicated that they saw no better or worse, 2 air divers and 4 Nitrox divers thought their vision was improved, which, according to one of them, had to do with the clarity of the pool water. The Nitrox divers and the air divers had on average about 75 bar consumed (total M = 75 bar, standard deviation, SD or the average deviation of the average = 25.71 bar). According to most air divers that matched their consumption during their previous dive, two air divers thought they probably had consumed more air than during their previous dive. However, most Nitrox divers declared that consumption during this dive was different than normal: two of them thought to have consumed more breathing gas, another three, that they had consumed less. The three others thought their consumption was the same as during their previous dive. About half of the divers, 4 air divers and 3 Nitrox divers, felt after this dive no difference in fatigue. The other 4 air and 5 Nitrox divers found swimming in Nemo 33 less tiring. This single dive was probably too relaxed and too short to demonstrate this effect of Nitrox that is felt after multiple diving days. Half of the Nitrox divers indicated they could consider that during this dive, their thinking was clearer than their last air dive. So people have the impression they think clearer when they dive with Nitrox.

In the previous experiment with only air divers, we had seen that depth made us slower and did make us prone to error. The number of completed questions was much less at a depth of 35 meters than at 2.5 meters. The same pattern was observed in this experiment: the air divers completed 16 questions at 35 meters and 18 questions at 2.5 meters. The Nitrox divers in this experiment answered more questions: 19 questions at 35 meters and 20 at 2.5 meters. Although these differences were very small (and not significant), it seems that divers can think faster when they dive with Nitrox instead of air.

Of course it's not only important to think quickly, but also to think correctly. The air divers on the previous experiment made significantly more errors at 35m than at 2.5m. The same can be observed with the air divers of this experiment: at 35m they had on average only 8 questions correct (M = 7.86, SD = 3.53), while at 2.5m they had 11 questions correct (M = 10.71, SD = 5.35). We did not see that difference with the Nitrox divers: they





correctly answered 11 questions at both depths (M = 10.75, SD = tablets 2.5m, M = 11.49, SD = 6.85). Although these differences are not really big (but almost significant), it seems that Nitrox 'protects' us against the effects of depth during our thinking abilities.

In the previous experiment, it seemed that not all aspects of our thinking are influenced by depth. Divers were able to recall as much (or better, as little) of the imaginary fish they encountered at 35m as of the ones at 2.5m. In both cases they remembered less than half the features. We concluded that it was difficult to recognize the attributes of an unknown fish. Unlike in the previous experiment, where the divers had not had the chance to prepare for this kind of test, we showed them during the dry-run, an example of a home-made fish (as well as a sample of the questions).

This preparation proved its effect. The divers were able to remember the fish a lot better. Where the divers from the previous experiment could hardly remember half the fish (3 of the 7 characteristics), the divers of the current experiment remembered on average, 6 of the 7 characteristics of the fish at 2.5m and an average of 5 of the 7 features of the 35m fish. Unlike the intelligence test, the effect of depth on the memory was no different for air or Nitrox divers. Both types of divers remembered 1 characteristic more from the 2.5m fish than the one at 35m.

AND WHAT HAVE WE LEARNT TODAY?
1. Depth makes us slower thinkers and more prone to mistakes, but Nitrox can protect us.
2. Depth also has an effect on our memory, but Nitrox doesn't offer a protection against it.
3. The protective effect of Nitrox does not apply to all aspects of our thinking.

AND WHAT ABOUT THE GUINEA PIGS OR BETTER, THE UNDERWATER TEST RATS?
An enthusiastic group that gathered on time in Nemo 33. Many familiar faces. They had taken part in the first experiment and had really enjoyed it, so much that they wanted to participate in the Nitrox version of it.

Happy memories of the last experiment. And yes, they wanted to participate for the cozy atmosphere, but they were also very curious about the effect of Nitrox.

We had the same team photographers, camera and lighting crew. Less nervous this time, but equally passionate and enthusiastic.

One group was really special. All the Dutch participants had the same wonderful t-shirt with the logo of, our 'Experimental Deep Dive Team' on it. "Yes," said Arjan, one of the t-shirt guinea pigs, "we found this experiment very interesting. And that is why we are here with full commitment. We had those t-shirts printed to show team spirit. We want this experiment to succeed. And we are very curious about the results". It was very fun working with such a bunch of committed people…

And they had not known that after their hard underwater work, we had foreseen a relaxing phase with food, drink and lots of fun…That was our little secret.

Everyone did his/her very best during the experiment: test divers, photographers, camera crew, lighting crew, escort divers and yes, we ran out of time. But never mind, the experiment was successful and with these results, our statistical expert Leentje could do something with it all.

After the hard work, we had our relaxation time in the restaurant. Some refreshments, questionnaires filled out, spaghetti plates emptied, and lots of stories. The following roaring statements were shared at the table:

- "Difficult tests those Mensa-tests" (they were intelligence tests!).
- "I know for sure that I have been diving with Nitrox" (proved to be not true).
- "When's the next experiment? I would like to join again" (will come for sure).
- "It's very nice to get to know other people this way" (it is indeed not a regular dive trip).

And so you see, running experiments are all part work, part fun…

PARTICIPANTS (in alphabetic order)
Carry Benoy – Jan Boeye – Liesbeth Boeye – Benjamin Boeye – Nanou Bultynck – Eric Burgers – Ann Cockx – Nick De Loose – Claudia Gravenstein – Rudi Janssen – Sander Kik – Jan Lumbeeck – Gerard Mirer – Olivier Simons – Peter Smets – Patrick Steeno – Kristof Steeno – Peter van Bragt – Jose Van

den Bleeken – Walter Van Deuren – Arjan Van Es – Glenn van Ginkel Raymond – Patrick Van Hoeserlande – Amber Van Hoeserlande – Frederik Van Poucke – Tine Vanderaspoilden – Dora Verhoeven – Kiki Vleeschouwers.

USEFUL WEBSITES
Nemo33 – www.nemo33.com
Scuba Service – www.scubaservice.be
Mensa – www.mensa.be

On the surface

our work looks perfect

Deep down

it also makes a difference

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DIGITAL ONLINE 2013 – THE RESULTS ARE IN

THE UAE'S ONLY UNDERWATER PHOTOGRAPHY AND FILM COMPETITION

"I would like to give a warm welcome to the new additions of Digital Online's judges this year, we are proud to have some of the top underwater photographers in the UAE and in the world as part of the panel. We've noticed that this year's competition has taken underwater photography to another level yet again, with entries showing real talent in shots taken to share the beauty of our marine life with everyone. Being the UAE's only underwater photography and film competition, it will enhance the diving industry within the UAE and the region."
EDA Vice Chairman of the Board – Mr. Essa Al Ghurair

DIGITAL ONLINE
جمعية الإمارات للغوص
EMIRATES DIVING ASSOCIATION
PHOTOGRAPHY AND FILM COMPETITION

DIGITAL ONLINE'S MAIN OBJECTIVES

- To gather information on the number of underwater photographers in the UAE (both professional and amateur).
- To discover new promising underwater photographers in the UAE.
- To develop the human interaction with the underwater environment and highlight the beauty of its fauna and flora.

Digital Online is open to UAE Nationals and all people living in the UAE under a valid Residence Visa and of any diving qualification with a valid EDA membership.

THE BEGINNING

Digital Online was realized in 2009 by Marcelo Mariozi, a professional underwater photographer, newly relocated to Dubai who had previously been involved in the organisation and set up of underwater photography competitions in his native country of Brazil. As there were no underwater photography competitions existing in the UAE at the time, Digital Online was introduced by EDA for resident photographers and to develop a relationship and human interaction with those unfamiliar with the underwater world and environment. The film category was introduced as an extension to the competition in 2012 to share motion pictures.

The event now in its fifth year, has seen the steady growth of underwater photography participation, the enthusiasm and the passion step up to another level. The event has attained equal success within the non-divers who come to support the participants at the Awards and Exhibition night, to view and enjoy the still and motion pictures of our underwater world.

For 2013's regulations, each photographer had been entitled to submit 4 images in total following 3 categories (Fish, Macro and Wide Angle). 3 images must have been taken within the UAE or Musandam and one image of choice may have been taken from anywhere in the world.

For the film submissions, participants could submit 2 films of a maximum of 5 minutes, including credits, by showing off creative editing skills using the themes 'Marine Life' and/or 'Wreck'.

Ali Khalifa Bin Thalith, Warren Baverstock, Jonathan Ali Khan and Nuno Sá were a part of this year's panel of judges, joining EDA's resident judges, Reema Abbas and Ally Landes. We are honoured to have such amazing people and photographers/videographers be a part of this event with us.

The Digital Online Awards & Exhibition evening was held on Wednesday, 29th of May in the Gallery of Light, DUCTAC in Mall of the Emirates from 19:00-22:00. Emirates Diving Association organized the catering through The Lime Tree Café & Kitchen and the event was refreshed by Coca-Cola.

We would like to thank all our sponsors who have made these competitions possible and the wonderful prizes they have provided for 2013: BFC Travel Management, Tourism Malaysia, Desert Islands Resort & Spa By Anantara and Al Mahara Diving Center, Le Meridien Al Aqah Beach Resort Fujairah and Al Boom Diving, Al Marsa Musandam, Nomad Ocean Adventures, MTM Marine, Delma Marine, Divers Down, Freestyle Divers, Lime&Tonic, Pavilion Dive Centre and Gulf Marine Sports.

We would also like to thank our printing sponsor, Print Works, who printed the 143 images on display at the Awards & Exhibition.

EVENT BY EDA

REFRESHED BY COCA-COLA

PRINTING SPONSOR

PRINT WORKS

PRIZE SPONSORS

SPONSORS AND PRIZES

FROM L-R | EDA's Executive Director, Ibrahim N. Al-Zu'bi opened Digital Online's Awards & Exhibition evening and the medals and trophies were awarded to the winners by EDA's Board of Director's, Essa Abdulla Al Ghurair, Khalfan Khalfan Al Muhairi, Rashid Al Hajji and Omar Al Huraiz.

This year's winners chose their own prizes (listed below) which were awarded to them by Digital Online's 16 Prize Sponsors.

* Prizes chosen are marked in bold in the score charts below.

1. BFC TRAVEL MANAGEMENT (3 packages sponsored)
1. Destination Package – 4 days/3 nights in Tioman Island, Malaysia
2. Destination Package – 4 days/3 nights in Sharm El Sheikh, Egypt
3. Destination Package – 4 days/3 nights in Aqaba, Jordan

2. TOURISM MALAYSIA (2 packages sponsored)
Destination Package – 5 days/4 nights in Sipadan, Malaysia

3. DESERT ISLANDS RESORT & SPA BY ANANTARA AL MAHARA DIVING CENTER
Two nights stay in one Deluxe Sea View room for two with sumptuous breakfast buffet. 2 dives to discover the local marine flora and fauna and local wrecks through Desert Islands Watersports Centre which is a newly opened PADI 5 Star Dive Resort and watersports centre offering the full range of PADI programs and more.

4. LE MERIDIEN AL AQAH BEACH RESORT FUJAIRAH AL BOOM DIVING
One night stay in a superior room at Le Meridien Al Aqah Beach Resort inclusive of breakfast buffet at Views Restaurant for two. Day trip for 2 on East Coast with Al Boom Diving.

5. AL MARSA MUSANDAM (2 packages sponsored)
2 night livaboard trip in the Musandam starting Thursday evening to Saturday evening.
Includes all meals starting with dinner and ending with lunch, tea, coffee water and soft drinks, 6 dives, tank and weights, diving equipment and diving coupons, swimming, snorkeling, kayaking and fishing,.

6. NOMAD OCEAN ADVENTURES (3 prizes sponsored)
1. Rebreather on Submatix Course to 40m (6 dives)
2. Rebreather DSD (1 night/1 dive)
3. Weekend Package (1 night/1 day)

7. MTM MARINE (3 prizes sponsored)
1. Mares Icon Dive Computer
2. Mares Carbon Regulator 42
3. Mares Matrix Dive Computer

8. DELMA MARINE (3 prizes sponsored)
1. Scubapro MK2 + R295 Int
2. Scubapro Console Compact Mano 400 Bars
3. Scubapro R295 Octopus

9. DIVERS DOWN (1 prize sponsored)
Dive Rite XT Regulator

10. FREESTYLE (1 package sponsored)
Overnight Stay Dive Package on East Coast

11. LIME&TONIC (1 package sponsored)
Hakkasan Dim Sum & Tea Tasting for 4

12. PAVILION DIVE CENTRE (3 prizes sponsored)
1. Musandam Day Trip (2 Dives)
2. PADI Nitrox Course
3. 2 Dubai dives with hotel access to Jumeirah Beach Hotel

13. GULF MARINE SPORTS (1 prize sponsored)
BARE Wetsuit

14. EMIRATES DIVING ASSOCIATION (8 prizes sponsored)
1. A Diver's Guide to the Art of Underwater Photography Creative Techniques and Camera Systems for Digital and Film
2. Reef by DK Publishing
3. Ocean Soul by Brian Skerry

PROFESSIONAL PHOTOGRAPHY WINNERS

	FISH	MACRO	WIDE ANGLE	INTERNATIONAL
1st PLACE	Iyad Suleyman (519 pts) **1.3**	Iyad Suleyman (487 pts) **5**	Simone Caprodossi (493 pts) **3**	Iyad Suleyman (519 pts) **4**
2nd PLACE	Sijmon de Waal (479 pts) **14.1**	David Robinson (476 pts) **6.3**	Iyad Suleyman (428 pts) **9**	Sijmon de Waal (506 pts) **8.1**
3rd PLACE	Anna Bilyk (465 pts) **12.3**	Simone Caprodossi (455 pts) **11**	Ahmed A Shuhail (420 pts) **14.3**	Ahmed A Shuhail (503 pts) **13**

AMATEUR PHOTOGRAPHY WINNERS

	FISH	MACRO	WIDE ANGLE	INTERNATIONAL
1st PLACE	Yousef Al Ali (442 pts) **7.2**	Yousef Al Ali (443 pts) **7.3**	John Hager (402 pts) **5**	Juraj Roka (475 pts) **7.1**
2nd PLACE	Michael Sauter (395 pts) **6.2**	Juraj Roka (426 pts) **12.1**	Terry Garske (370 pts) **8.2**	Lujan Mourad (452 pts) **10**
3rd PLACE	Juraj Roka (394 pts) **14.1**	Michael Sauter (402 pts) **14.3**	Kelly Tymburski (337 pts) **14.1**	Kelly Tymburski (442 pts) **14.2**

VIDEOGRAPHER WINNERS

	MARINE LIFE	WRECK
1st PLACE	Khaled Sultani (468 pts) **1.2**	Khaled Sultani (443 pts) **6.1**
2nd PLACE	Ramuel Derige (295 pts) **12.1**	Angus Carlisle (372 pts) **8.3**
3rd PLACE	Amro Dabash (250 pts) **14.3**	Ramuel Derige (291 pts) **14.3**

OVERALL DIGITAL ONLINE WINNERS

	TOTAL POINTS ACCUMULATED
PROFESSIONAL	Iyad Suleyman (1953 pts) **2**
AMATEUR	Michael Sauter (1484 pts) **2**
VIDEO	Khalde Sultani (911 pts) **1.1**

UW PHOTOGRAPHY

PROFESSIONAL PHOTOGRAPHERS				
OVERALL	FISH	MACRO	WIDE ANGLE	INTERNATIONAL
4th PLACE	Philippe Lecomte (464 pts)	Andrew Yiacoumi (453 pts)	Ahmed A. Shuhail (420 pts)	Nicolas Blouin (499 pts)
5th PLACE	Ahmed A. Shuhail (461 pts)	Stewart Clarke (441 pts)	Sijmon de Waal (398 pts)	Anna Bilyk (482 pts)
6th PLACE	Steven Board (429 pts)	Ahmed A. Shuhail (437 pts)	Magdi Hanna (380 pts)	Jeffrey Catanjal (465 pts)
7th PLACE	Simone Caprodossi (417 pts)	Jeffrey Catanjal (431 pts)	Stewart Clarke (369 pts)	David Robinson (463 pts)
8th PLACE	David Robinson (410 pts)	Nicolas Blouin (413 pts)	Peter Mainka (350 pts)	Stewart Clarke (463 pts)
9th PLACE	Steve Wood (408 pts)	Steven Board (397 pts)	Awni Hafedh (343 pts)	Simone Caprodossi (439 pts)
10th PLACE	Michael M. Loane (401 pts)	Anna Bilyk (396 pts)	Gordon T. Smith (340 pts)	Gordon T. Smith (438 pts)
11th PLACE	Stewart Clarke (393 pts)	Awni Hafedh (395 pts)	David Robinson (339 pts)	Eric McDonald (435 pts)
12th PLACE	Peter Mainka (386 pts)	Gordon T. Smith (375 pts)	Jove C. Viloria (329 pts)	Philippe Lecomte (431 pts)
13th PLACE	Awni Hafedh (383 pts)	Eric McDonald (374 pts)	Steven Board (326 pts)	Peter Mainka (398 pts)
14th PLACE	Gordon T. Smith (365 pts)	Sijmon de Waal (365 pts)	Eric McDonald (324 pts)	Steve Wood (398 pts)
15th PLACE	Jove C. Viloria (351 pts)	Michael M. Loane (359 pts)	Steve Wood (313 pts)	Jove C. Viloria (379 pts)
16th PLACE	Jeffrey Catanjal (309 pts)	Peter Mainka (343 pts)	Philippe Lecomte (303 pts)	Magdi Hanna (292 pts)
17th PLACE	Magdi Hanna (298 pts)	Philippe Lecomte (313 pts)		Michael M. Loane (283 pts)
18th PLACE	Mohamad A. Ahmad (275 pts)	Jove C. Viloria (304 pts)		Mohamad A. Ahmad (270 pts)
19th PLACE	Eric McDonald (264 pts)	Steve Wood (297 pts)		
20th PLACE		Magdi Hanna (274 pts)		
21st PLACE		Mohamad A. Ahmad (256 pts)		

AMATEUR PHOTOGRAPHERS				
OVERALL	FISH	MACRO	WIDE ANGLE	INTERNATIONAL
4th PLACE	Clariza McDonald (384 pts)	Michael Sauter (402 pts)	Redentor Vargas (311 pts)	Louis Girard (431 pts)
5th PLACE	Simon Long (360 pts)	Terry Garske (377 pts)	Gisela Vargas (293 pts)	Michael Sauter (420 pts)
6th PLACE	David Peters (359 pts)	David Peters (373 pts)	Ismail M. El Fakhry (289 pts)	Gisela Vargas (378 pts)
7th PLACE	Sue Giles (329 pts)	Gisela Vargas (353 pts)	Yousif Al Ali (272 (pts)	Nassim Miri (374 pts)
8th PLACE	Gisela Vargas (326 pts)	Louis Girard (320 pts)	Precious Joy Azul (268 pts)	Yousif Al Ali (349 pts)
9th PLACE	Kelly Tymburski (317 pts)	Heba M. Zaatout (317 pts)	Michael Sauter (267 pts)	Clariza McDonald (342 pts)
10th PLACE	Ismail M. El Fakhry (309 pts)	Claire Donnelly (313 pts)	David Peters (217 pts)	Redentor Vargas (334 pts)
11th PLACE	John Hager (309 pts)	Simon Long (309 pts)	Louis Girard (186 pts)	David Bushnell (286 pts)
12th PLACE	Precious Joy Azul (294 pts)	Sue Giles (296 pts)	Clariza McDonald (183 pts)	Pourya Amiri (262 pts)
13th PLACE	Terry Garske (277 (pts)	David Bushnell (295 pts)	Heba M. Zaatout (165 pts)	Hesam Saroukhani (257 pts)
14th PLACE	Redentor Vargas (276 pts)	Emad Eid (289 pts)		Simon Long (253 pts)
15th PLACE	David Bushnell (274 pts)	Clariza McDonald (283 pts)		John Hager (236 pts)
16th PLACE	Andrew Roughton (271 pts)	Kelly Tymburski (270 pts)		Heba M. Zaatout (232 pts)
17th PLACE	Claire Donnelly (271 pts)	John Hager (248 pts)		Emad Eid (180 pts)
18th PLACE	Louis Girard (247 pts)	Andrew Roughton (247 pts)		
19th PLACE	Heba M. Zaatout (238 pts)	Redentor Vargas (236 pts)		
20th PLACE	Pourya Amiri (217 pts)	Precious Joy Azul (224 pts)		
21st PLACE		Ismail M. El Fakhry (203 pts)		

VIDEOGRAPHERS		
OVERALL	MARINE LIFE	WRECK
1st PLACE	Khaled Sultani (468 pts)	Khaled Sultani (443 pts)
2nd PLACE	Ramuel C. Derige (295 pts)	Angus Carlisle (372 pts)
3rd PLACE	Amro Dabash (250 pts)	Ramuel C. Derige (291 pts)

DIGITAL ONLINE GUEST JUDGES

Ali Khalifa Bin Thalith, Warren Baverstock, Jonathan Ali Khan and Nuno Sá will be judging Digital Online 2013 entries in addition to Ally and Reema. We're honoured to have such amazing people and photographers/videographers be a part of this event.

ALI KHALIFA BIN THALITH | DOCUMENTARY FILM PHOTOGRAPHER

Secretary General of 'Hamdan Bin Mohammed Bin Rashid Al Maktoum International Photography Award' (HIPA)

Born in Dubai, Ali Khalifa Bin Thalith Al Humairi is a professional documentary film photographer and he is the Secretary General of 'Hamdan Bin Mohammed Bin Rashid Al Maktoum International Photography Award' (HIPA). He holds diplomas in Documentary Photography (London Academy); and French and Literature (Montpellier University, South of France).

His career journey began in 1995, since which he has participated internationally in numerous exhibitions and specialized courses. He has collaborated in the coverage of many major events globally in: Heidelberg – Germany; Phuket – Thailand; Sipadan – Malaysia; Barcelona – Spain; as well as in the UAE.

In 2010, he won the 'Mohammad Bin Rashid Award for Young Business Leaders' for the best marketing and promotional project. Bin Thalith's rich portfolio of documentaries and films includes: 'Journey to the Green Mountain'; Four episodes of the 'Masirah Island', Oman; 'Alyasat and Alhalaniyat Island', Oman; and 'Sipadan', Malaysia (known for its ecological diversity). Utilizing his extraordinary talents he produced a unique short documentary film titled "Gaza Diver", which narrates the journey and hopes of a poor young man who travels to Dubai for medical treatment – at the behest of a noble gesture by Sheikh Hamdan Bin Mohammed Bin Rashid Al Maktoum, the Crown Prince.

WARREN BAVERSTOCK | UNDERWATER PHOTOGRAPHER

Aquarium Curator – The Burj Al Arab

Warren has been involved with a number of filming projects within the region such as the popular television documentary "Arabia's Cycle of Life" and the more recent and ongoing "Sharkquest Arabia". Having a passion for elasmobranch conservation, Warren has gained essential filming experience by joining researchers in Saudi Arabia, Qatar, Djibouti and the Maldives where his filming has included large aggregations of whale sharks and manta rays. With vast experience of working with marine animals within a commercial aquarium environment, Warren specialises in aquaria photography/videography as well as the building and filming of artificial environments for documentaries.

Warren was Digital Online's overall professional winner for 2011 and 2012 as well as 1st and 2nd place winner in British Underwater Image Festival's 2011 competition and was featured in Time magazine, 2011 for his amazing photography on manta rays of the Maldives.

WEBSITE: www.warrenbaverstock.com
FACEBOOK: Underwater Photography by Warren Baverstock

JONATHAN ALI KHAN | WILD PLANET PRODUCTIONS

Managing Director – Natural History TV Production, Underwater filming specialists, video production and photography.

JAK is a topside wildlife and underwater camerman, producer, director and editor with a strong passion for the natural world having worked on a wide range of unique projects in the region and is recognized as an authority on environmental, conservation and diving related issues.

His fascination with filming all started after years of working as a photojournalist and shooting underwater stills. His primary interest is in marine subjects that led to the creation of Ocean World Productions in 2003. In 2008, JAK left Ocean World Productions in order to focus entirely on natural history TV development, leading to the recent creation of Wild Planet Productions.

WEBSITE: www.wildplanetfilms.org
FACEBOOK: Wild Planet Productions

NUNO SÁ | WILDLIFE PHOTOGRAPHER

Professional Photographer Specializing in Marine Life

Nuno has been a professional photographer since 2004, specialized in marine life photography. He is the author of three books and several dozens of articles published in National and International magazines. He is the co-author of the "Azores Diving Guide" – Portugal's first published diving guide, and a regular collaborator of several magazines, such as National Geographic Portugal.

He is the first Portuguese wildlife photographer nominated in some of Europe's major nature photography competitions, such as: Wildlife Photographer of the Year and Asferico International Nature Photography Competition, amongst others.

Nuno is also on the Wild Wonders of Europe's team of top European nature photographers. This is the world's biggest ever nature photography project with an expected public of over 100 million people, a project supported by the National Geographic Society.

WEBSITE: www.photonunosa.com

DIGITAL ONLINE
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EMIRATES DIVING ASSOCIATION
PHOTOGRAPHY AND FILM COMPETITION

EDA JUDGES

REEMA ABBAS | EMIRATES DIVING ASSOCIATION
Projects Manager

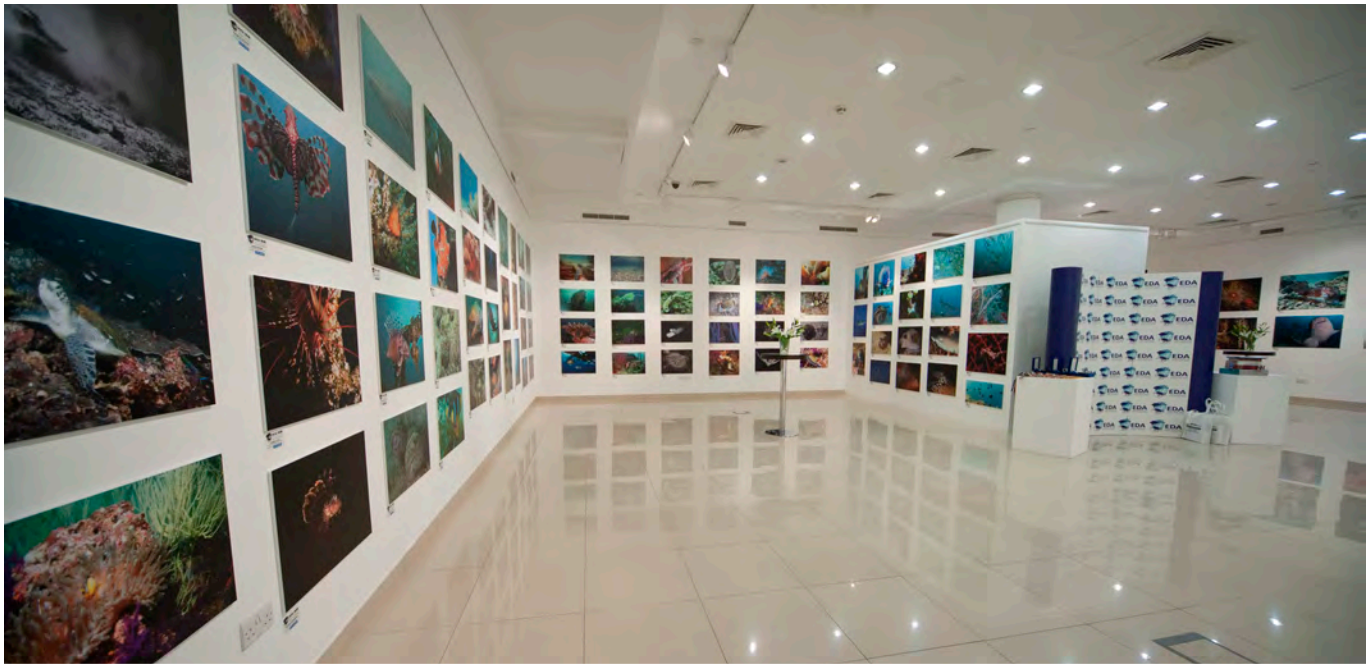
Reema is a UAE national who has an insatiable passion for life. She paints, practices yoga and travels extensively in search of adventure. An enthusiastic diver; she quotes, 'Diving gives you a feeling of exhilaration as well as tranquility'. Her work with EDA as Projects Manager gives her a sense of fulfillment, knowing that she's with like-minded people working together for a positive cause.

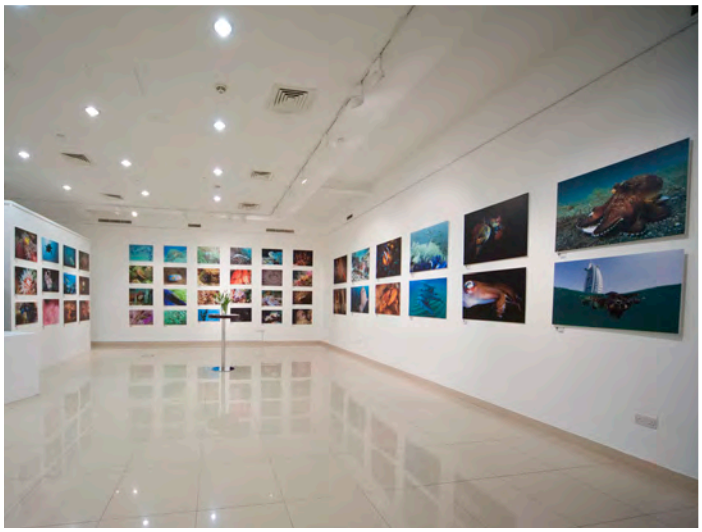
ALLY LANDES | EMIRATES DIVING ASSOCIATION
Events Coordinator, Graphic Designer, Photographer and Videographer

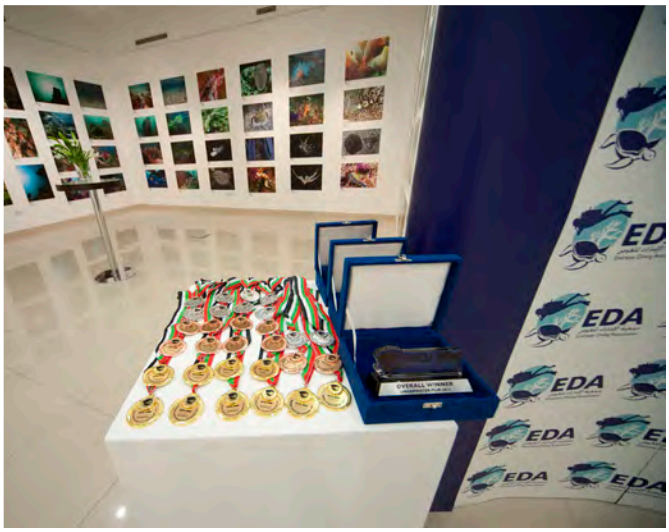
Ally has been working with EDA since December 2004 where she created and introduced the quarterly magazine, 'Divers for the Environment' and is the magazine Editor. She branded and helped foresee the development of Digital Online – The UAE's Only Underwater Photography and Film Competition from its launch in 2009 and has since managed the event. Ally keeps busy within her fields of passion always looking to fill gaps with new improvements, developing EDA's brand, designs and managing all the EDA media material and FAM trips. As a qualified PADI Instructor, she utilizes the experience within everyday life at EDA.

THE PHOTOGRAPHY ENTRIES, THE AWARDS & EXHIBITION

PHOTOGRAPHY **DIEA SMADI**, **YOUSIF AL ALI** AND **HEBA ZAATOUT**







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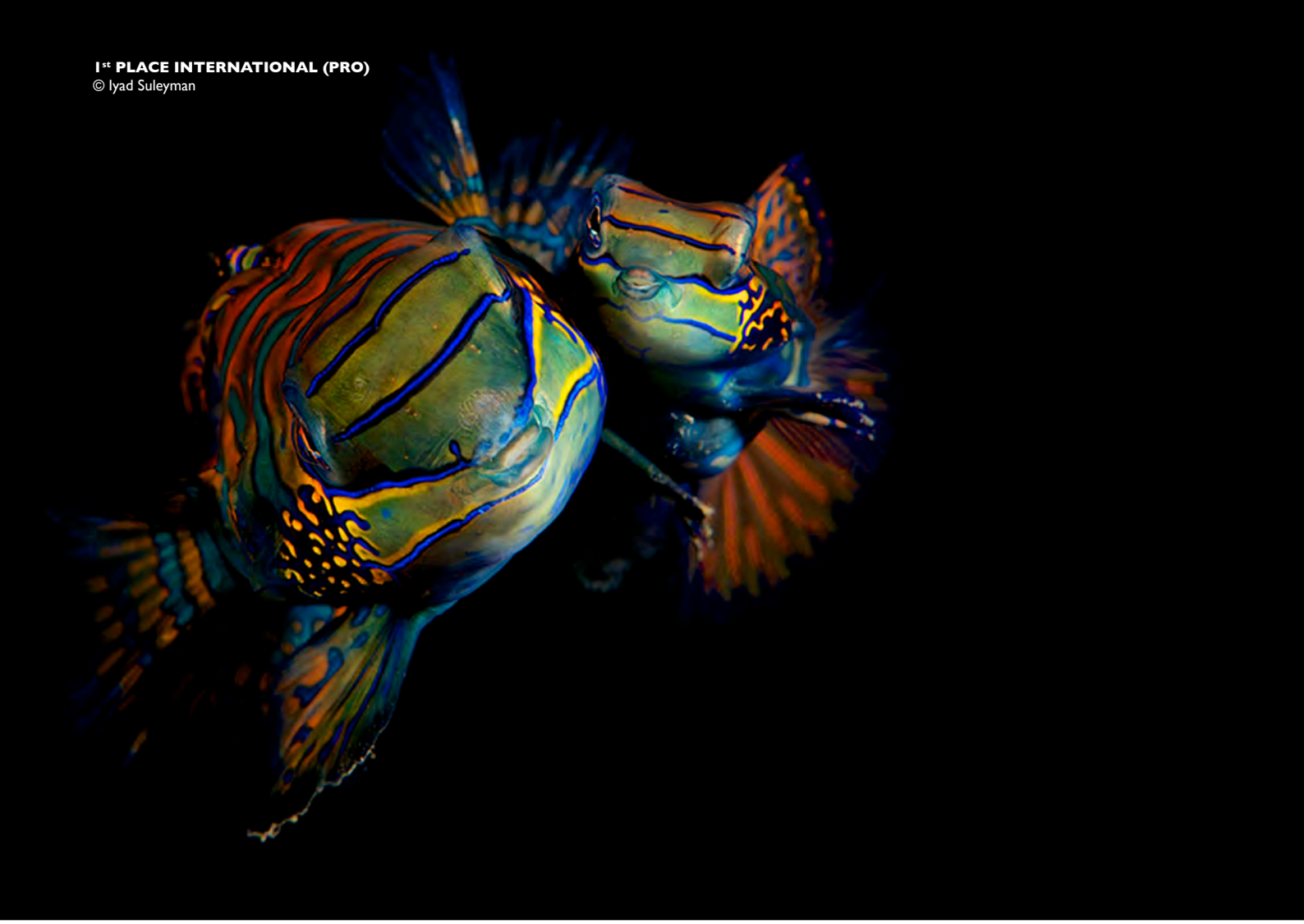

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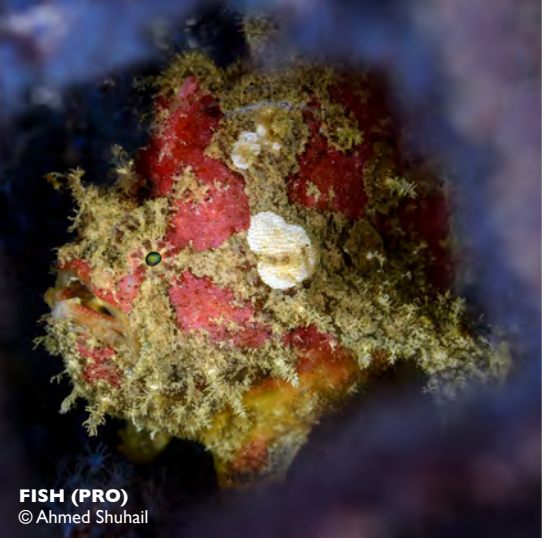
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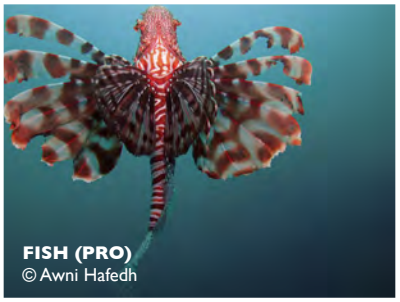
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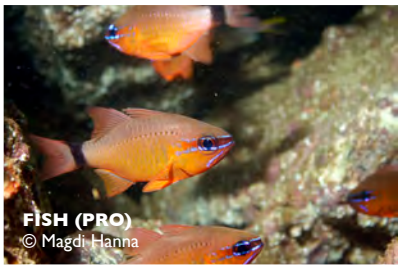
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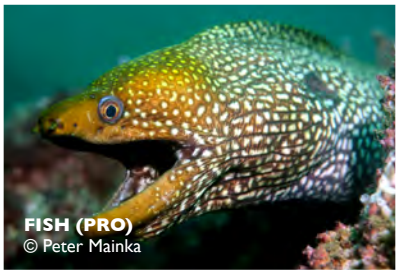
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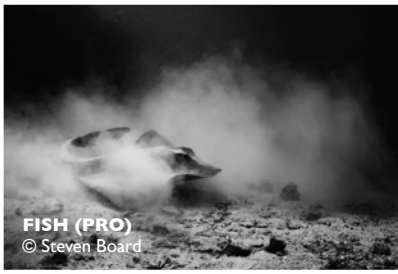
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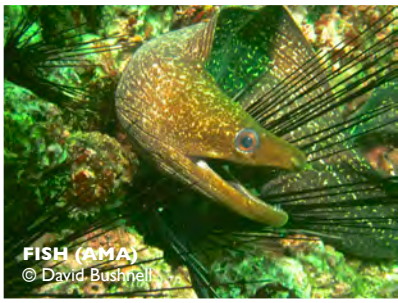
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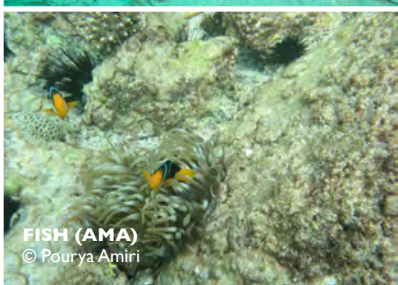
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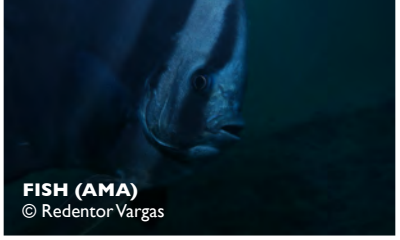
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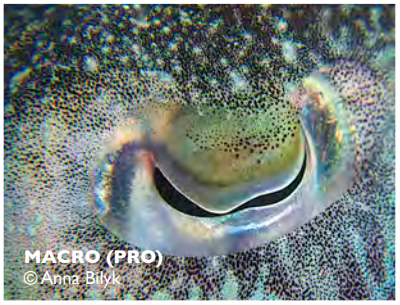
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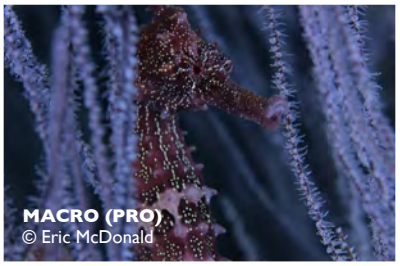
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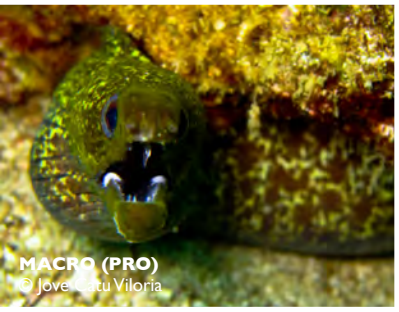
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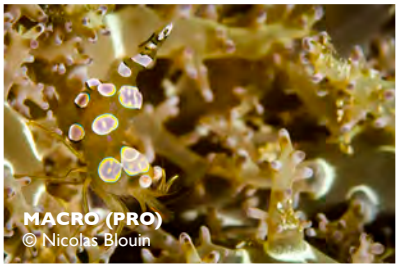
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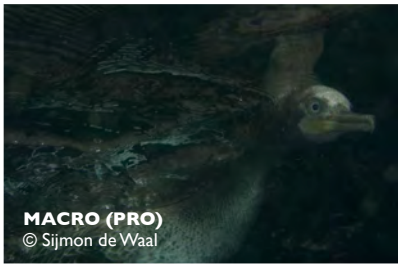
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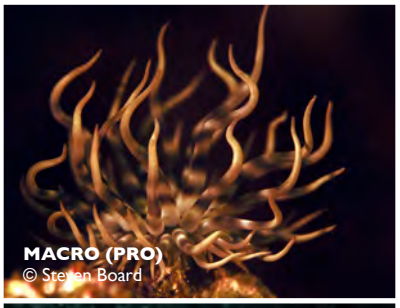
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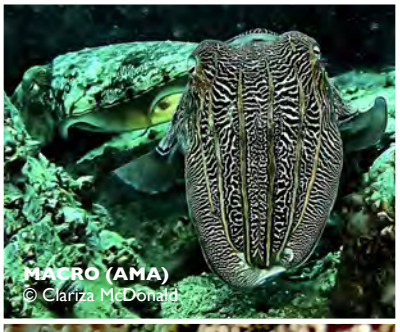
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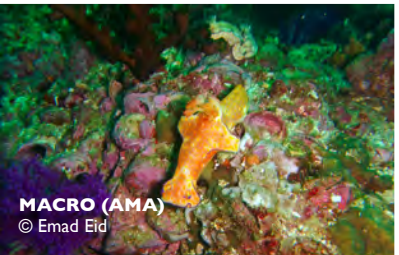
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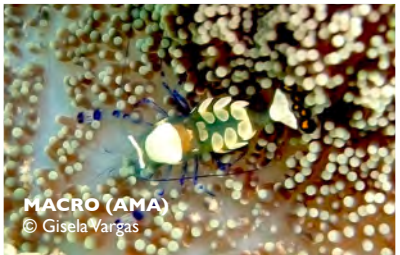
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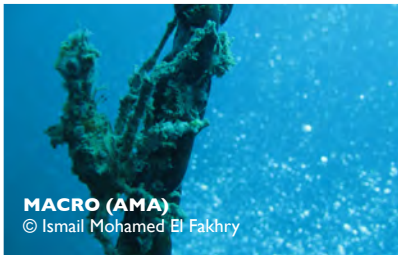
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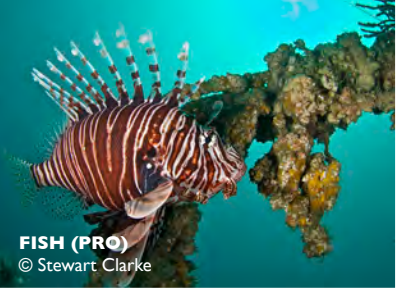
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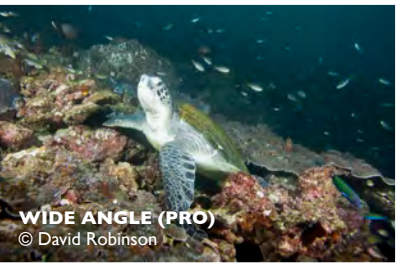
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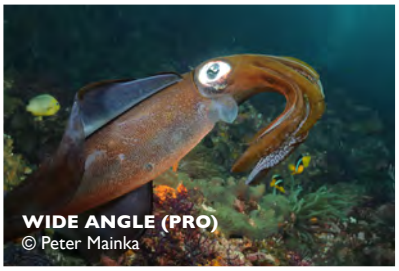
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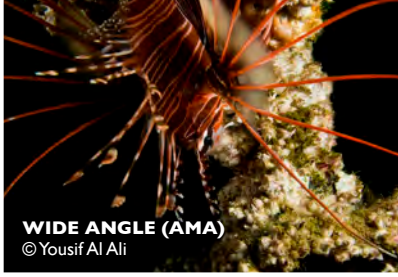
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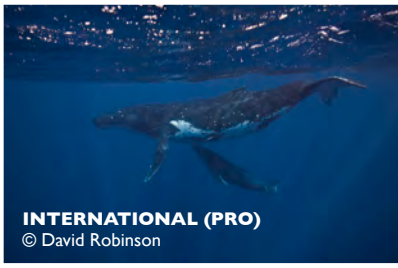
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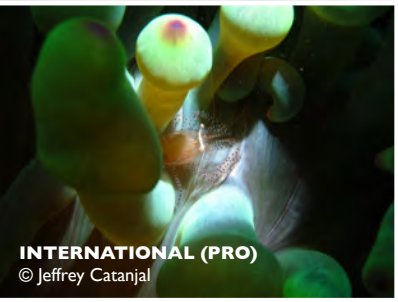
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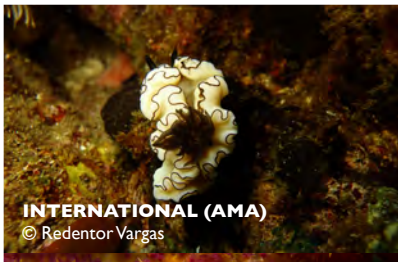
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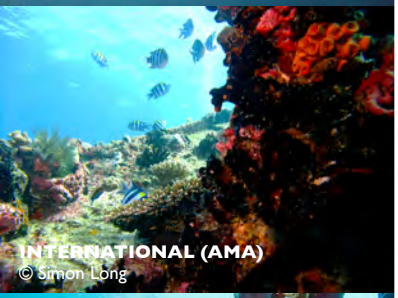
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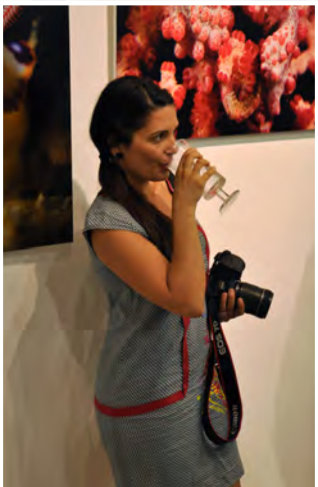

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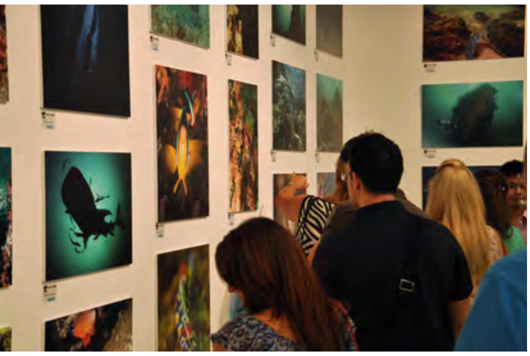







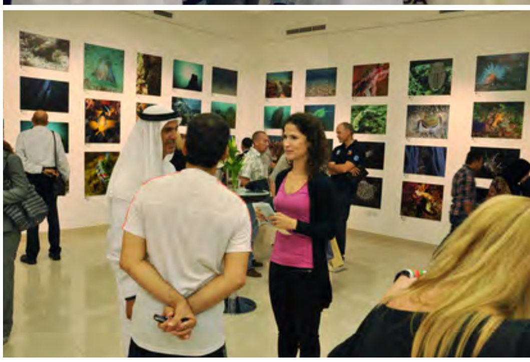







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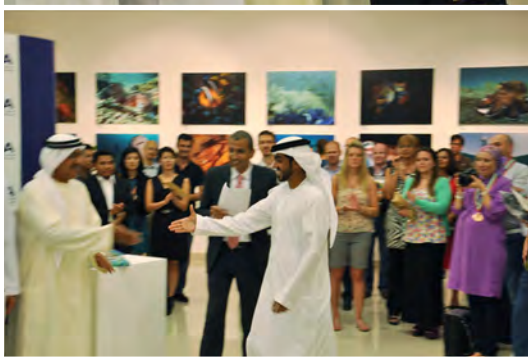


DIVING IN PURA VIDA NEGROS, PHILIPPINES

FEATURE AND PHOTOGRAPHY **SCUBA STEVE**

Having been often told by lots of fellow dive instructors who call the Philippines home, that I should visit, I took the opportunity in February to finally go and see what all the fuss is about.

I decided I wanted to see what the critter diving was like and if it could in any way rival that of the more well-known Lembeh Straits in Indonesia. So after taking advice, we picked the island of Negros and the resort of Pura Vida, home of the Sea Explorers Dive Centre. www.pura-vida.ph

It's not an easy journey to get there, 8 hours to Manila, an overnight stay and a very early start the next day to catch the 1 hour flight down to Dumaguette. However, the resort car was waiting for us and 90 minutes later we were checking into our room.

Pura Vida is a divers resort, built by divers, for divers. Sea Explorers are a German owned dive company with 4 dive centres spread across the Philippines (Malapascua, Dauin, Moalboal and Alona Beach). They are probably one of the most well run, efficient and friendly dive set up's I have experienced. Everything runs smoothly, the boats are fantastic, the dive guides really know their stuff and it is a pleasure diving with them. The biggest group we dived with in the whole week was 4 but often it was just myself and my dive buddy with our guide.

Equally, the resort was stunning. The rooms are set around a pool with a beach bar and adjoining restaurant so you are never more than 10 steps from your after dive drink and evening meal. Breakfast is taken in the rooftop restaurant overlooking the sea with a pleasant breeze. The food was always good and there was plenty of choice, both local options and international favourites. We stayed on a bed and breakfast only deal, but the prices for drinks and food are very low even in the resort. And if you want a night out, the main town of Dumaguette is only 30 minutes away by tuk tuk. We found a fantastic seafood restaurant on the sea front and spent a couple of evenings enjoying the freshly caught offerings.

So to the diving. After all, that's what we were really there for. Was it to be as good as Lembeh and could the critters keep me interested for 20 dives over 7 days?

Our first dive gave us an indication we wouldn't be disappointed. Straight off the beach in front of the dive centre (so nice to do a proper shore entry for a change) we made our way down the sloping sand to around 16 metres and started our hunt. The dive centres in Dauin have created artificial reefs using tyres, blocks and bamboo structures over the past 20 years and these are now home to all manner of critters and corals. Ornate Ghost Pipefish, Frog Fish, Nudibranches, Flamboyant Cuttlefish, Scorpion Fish, Sea Horses, Snake Eels, Hingeback Shrimps, to name just a few.

70 minutes later, we turned and swam back up the slope to make our exit. In just one dive, we had already seen most of the things we hoped we would!

The next day, we headed out early for a full day trip to Apo Island. Taking the largest of the boats, the 45 minute journey was comfortable and picturesque. Apo has 2 resorts, both with a dive centre so you could stay there if you wanted. The island is famous for its healthy corals and huge diversity. Over 400 types of coral and 650 types of fish call this home. We did 3 dives on different parts of the island and were not disappointed. The turtles came out in numbers to see us and the colour of the coral was something to see. The whole island is a marine reserve and the protection that affords the eco system is obvious to see.

Over the next 5 days, we completed another 16 dives from Dauin. We decided to concentrate on the local sites and the macro life as that was what we really had come to see. One of the best things about Sea Explorers and how they run the diving, is that you are with the same guide all through your stay. That means you can set the agenda for your dives. We would talk through what we wanted to see and our guide would recommend sites. Each afternoon after our third dive we would discuss the next day's plans and the timings. On shore dives we could pretty much decide on our own timetable – handy if you decided you required a slightly longer afternoon nap!

We did one particular site 4 times because we had specific critters we wanted to photograph – my buddy couldn't get enough of the baby frogfish.

The deepest dive we did all week was 24 metres, most of the time you are in 12-16 metres as that's where the life is. And that means long bottom times. We found we didn't need nitrox but it was available.

In addition, the furthest dive site was 10

minutes away but often we didn't use the boats, just jumped into the dive centres trusty Jeepney and headed along the track to a nearby beach and walked in from the shore. Every dive gave us something new to see and take pictures of. One site in particular was nudibranch heaven! I found a solar powered nudi, one of my favourites.

Far too quickly, our last day arrived and we completed the final dive of our holiday in the morning before rinsing the gear and leaving it to dry. All that remained was to visit the resort spa and have a wonderful massage to relieve our aching muscles from the days of diving. My dive buddy also opted for a manicure and pedicure so she was ready for her return to work.

At the beginning of this article I said I wanted to see what all the fuss was about and whether the critter diving would rival that of Lembeh. Well I definitely know why the guys rave about Philippines diving and not only does it rival Lembeh, I would put it right up alongside it.

I will certainly be revisiting the Philippines and Sea Explorers – perhaps the Thresher Sharks in Malapascua next time?

SCUBA STEVE MUSANDAM DHOW TRIPS

FEATURE AND PHOTOGRAPHY **SCUBA STEVE**

I started running these trips in 2008, initially just for friends as a getaway from Dubai. We would do one night on the boat with 3 dives during the following day.

Over the years I have increased the number of trips I do each year and we now do regular 2 night trips to the top of the Musandam. Last year we also ran some 3 night trips to coincide with the Eid and National Day holiday weekends.

We get 7 dives in over the weekend and have been very fortunate to see Leopard Sharks, Devil Rays, Eagle Rays, Mola Mola and Whalesharks along with all the usual sea life you expect in the Musandam area.

Generally we use the Al Marsa Red Dhow which sleeps 16 guests in 8 twin cabins.

Here is an overview of a typical weekend:

THURSDAY

After a drive over from Dubai, checking in at the Al Marsa offices and checking any equipment rental, we usually depart Dibba harbor around 8pm. After getting everyone settled into their cabins and a short boat briefing, dinner is served around 8:30pm while the boat sails north heading for Sheesa Bay. A lazy evening ensues of chilling on the deck, catching up with old friends, meeting new ones. In the cooler months, many people opt to grab the duvet and pillow from their cabin and settle onto one of the sun loungers on the open deck, drifting into sleep watching the stars.

The boat usually arrives at Sheesa at around 1am and suddenly everything is peaceful as the engines stop. If you have been woken up by the sound of the anchor chain, you soon drift off again to the sound of the water lapping gently against the shores of Red Island.

FRIDAY

This is my favourite part of the weekend in some respects. Getting up at 6am, grabbing a cup of tea and standing on the top deck with the vista of Sheesa Bay and the Musandam spread in front of me. Often there will be dolphins in the bay and Sea Eagles will be swooping down from their nests high on the cliffs. This is the Middle East at its most magnificent and so many people never get to witness it. There is an immense sense of isolation and peace.

But it's time to wake up the divers and start kitting up for the first dive. We aim to be briefed, kitted up and in the water by 7am. First site is Red Island, a sheltered site inside Sheesa Bay with a sloping coral reef that reaches a wall at the point and drops to around 24 metres. Recently, we had a Leopard Shark on the point and we always see lobsters in the wall and small plateau. We finish the dive by shallowing off and drifting over the fantastic hard corals on the far side of the island.

Back on the dhow it's time for breakfast. Croissants, scrambled eggs, sausages, foul medames, cheeses, juices, coffee, toast and preserves. It's amazing how good breakfast tastes after a dive! And of course I have been shopping before the trip to stock up on Nutella, Peanut Butter (extra crunchy!), HP Sauce, Marmite, Vegemite. If it can be spread on toast then we have it!

Time for a snooze before our next dive at 11am. This time it's into the speedboat to head to Umm al Farayin in the far distance. Hopefully we can see the Mola Mola there again or the large groups of Devil Rays that swoop by. Or maybe we will head to Kachalu or Tawakul at Ras Musandam to spot sharks and see the stunning soft corals on the plunging walls.

Lunch, snooze and then its 3pm and we are diving again. If the currents are kind then White Rock or Hard Rock Café might be our destination. Or one of the sites at Ras Khaisah to spot the huge shoals of Jacks, Barracuda and Trevally hanging in the current on the point.

The dhow will often move while we are away diving so that when we surface we are close to the next site or our overnight mooring. We usually spend the second night in Habalayn Bay which means we do our night dive on Habalayn Rock. This is a lovely site after dark, turtles, electric rays, squid, and cleaning stations teeming with different types of shrimp. No deeper than 14 metres, it's just a very easy, relaxing dive.

The day ends with dinner, a few drinks and by 10pm most people are already feeling the effects of 4 dives and thinking about turning in for the night.

SATURDAY

By 7:30 we are heading to Ras Sarkan to catch the early morning sun on the cliffs and a drift dive along the wall. The red toothed trigger fish are everywhere! And hopefully the Devil and Eagle Rays will make an appearance again.

After breakfast we head to Sarkan Rock. One of my favourite sites in the area. At 30 metres there is a great wall and plateau with huge lobsters hanging out. Eagle Rays are often seen here as the currents wash around the rock. And at around 15-18 metres, there are a series of swim throughs in a boulder field.

We have a short surface interval before our third dive and usually finish the trip with a nice shallow dive in Ras Marovi, Pearl Island or Ras Lima.

It's time to start heading back, but first we have lunch moored in a secluded bay, get our kit washed and hang it out to dry. Then we head back to the top deck to snooze and sunbathe as the dhow heads back to Dibba for around 5pm.

The trips are proving very popular and are great value for money. The cost for 2 nights, 7 dives, all meals, diving permits, tanks and weights is AED1,700. The only additional cost is for equipment rental if you don't have your own.

Divers can complete courses on board during the trip such as Advanced Open Water, Nitrox, Deep or Whale Shark Awareness.

This year we are looking at some new ideas, such as longer trips so we can head further north. The 3 night trips include 10 dives. I am also keen to develop an exploratory trip for experienced divers who are happy to dive some of the sites out in the open ocean that the regular trips would not visit.

Dates of the trips can be found on www.scubasteve.ae and for more information you can mail me at info@scubasteve.ae.

COSTA RICA
NO ARTIFICIAL INGREDIENTS

FEATURE **ERNST VAN DER POLL** PHOTOGRAPHY **DIEGO ALEJANDRO MEJIAS CHACON**

Costa Rica has coastline on both sides of the country where the Pacific and the Caribbean marvels every visitor with its natural beauty, pristine beaches and hidden coves.

Pura Vida...Pure life...a more typical Costa Rican saying you will not find! Used in every form and shape by the warm and life loving people from Costa Rica called "Ticos" for short.

It can be used for greeting, showing your appreciation about someone or something, saying good-bye, and just giving off a good vibe.

If Latin America had a heart it would definitely be Costa Rica. Due to its geographical location, Costa Rica bridges the northern and southern most points of the two American continents. This makes Costa Rica the meeting point of a variety of cultures and a density of plants and animal species said to be unlike any other country in the world.

SOME INTERESTING AND FUN FACTS:

- Costa Rica hosts more than 5% of the world's biodiversity even though its landmass only takes up 0.03% of the planet's surface. The whole region is just teeming with life!
- Costa Rica's marine area reaches 580,000km^2, approximately 10 times larger than its land area of only 52,100km^2. Coco Island being one of the world's top scuba diving sites where you can see everything from huge schools of hammerhead sharks or dive with majestic giant mantas!
- There are about 52 species of hummingbirds in Costa Rica, making Costa Rica a true hummingbird capital.
- Monkeys are one of the most common mammals in Costa Rica – next to bats. The four common species are the Howler, Spider, White-Faced and Squirrel.
- 10% of the world's butterflies live here, more than the entire Continent of Africa!
- Costa Rica is one of the most valued environmental destinations. Approximately 25% of the country has protected forests and reserves. There are more than 100 different protected areas to visit. Costa Rica has plans to become the first Carbon Neutral country in the world by 2021!
- There are 801 miles of coastline in Costa Rica, an absolute heaven for beach lovers. You can wake up with the sunrise in the Caribbean, drive 6 hours and witness the sunset in the Pacific; few places in the world have these privileges.
- There are more than 121 volcanic formations in Costa Rica, and seven of them are active. Poas Volcano has the second widest crater in the world and Arenal is one of the ten most active volcanoes in the world.
- Costa Ricans have again been voted the happiest people in the world, ranking number one on Happy Planet Index! You will feel that the moment you touch down on Costa Rican soil!

Costa Rica is one of the longest standing democracies in Latin America and abolished their military in 1948, deciding to invest their resources in education and public services instead. Today Costa Rica has a literacy rate of 97% and English is considered the second language, widely spoken by all. Costa Rica is also one of the countries with the longest longevity in the world with a life expectancy for Ticos being 79.3 years!

Although the country is small and it covers only 0.03% of the surface of the globe, it proudly shelters 5% of the existing biodiversity of the entire world! 25.58% of the country is composed of conservation and naturally protected territory, Costa Rica introduced "Eco Tourism" making it a major destination for conservationists.

Costa Rica has coastline on both sides of the country where the Pacific and the Caribbean marvels every visitor with its natural beauty, pristine beaches and hidden coves. The beaches are extraordinary and cater to all kinds of tourists, from families that want to enjoy water sports, to honeymooners that are looking for a romantic and secluded holiday, to surfers; seeking the perfect wave. Costa Rica also has some of the best sport fishing in the world and is every fisherman's dream!

Jacques Cousteau once said: "The sea, once it casts its spell, holds one in its net of wonders forever."…This is exactly what happened to me. I remember as a 10-year-old boy looking out my classroom window with the ocean just a stone throw away. A huge whale appeared one morning and in the middle of the Algebra lesson, the teacher could not hold our attention any more and agreed to walk us to the beach across the road so we could have a closer look.

I was mesmerized by the sheer size of her. She stayed the entire week in the bay in front of our little school to give birth to her calf. I remember after the 3rd day, she was surrounded by a huge school of dolphins that encircled her, complete like they were trying to protect her and also celebrating the birth of her young calf. The spell was cast and I was captivated in it's net of wonder…

I was intimately connected to the ocean. My life shaped by it. I played in it, lived in it, made a life from it. After 25 years, I now find myself in Costa Rica, helping the Ocean cast a spell and captivate young and old alike.

"OCEAN EXPLORER FOR A DAY"

I started ConnectOcean in August 2012 in the small fisherman's village of Playa del Coco in Guanacaste Costa Rica. The ocean here is one of the most bio-diverse areas I have ever encountered. The number of marine species here totally blew my mind! It is not uncommon to encounter a school of 500 golden rays, a thousand odd Pan Tropical spotted dolphins, a pod of humpbacks and a hundred Olive Ridley turtles all within a morning of exploring the open ocean around the Papagayo Peninsula.

ConnectOcean Marine Environmental Awareness Programs strive to connect visitors of Costa Rica to the sea, the source of an ecology and culture that needs to be protected for future generations.

Our "Ocean Explorer for a day" experience, gives participants the chance to follow in the footsteps of the likes of Jacques Cousteau and Sylvia Earle by becoming an Ocean Explorer for a day. The day combines elements of exploration with fascinating environmental education and research programs.

"Ocean Explorer for a day" engages young and old in an adventure like exploration day on the Ocean, teaching them about:

- Ecology and Ecosystems
- Coastal Ecosystems and Intertidal Zones
- Coral Reef Ecosystems
- Open Ocean Ecosystems

The "Ocean Explorer for a day" Program is all based about learning with the Ocean being your classroom! You learn by exploring beaches and tidal zones, estuaries, snorkeling reefs and tracking wild dolphins and humpback whales on the Open Ocean.

SIN LIMITES ADAPTIVE DIVER TRAINING PROGRAM

ConnectOcean also connects people with the healing power of the Ocean.

SIN LIMITES (No limits) is ConnectOcean's Adaptive Diving program. SIN LIMITES focuses on capacity building, to develop life skills and create awareness within the community by integrating volunteers in a program that offers dive training to the disabled community that will contribute to their mental and physical health, fostering strong social bonds and active contributions to society.

The program is the first of it's kind in Costa Rica and will be launched from the 27th to the 29th of September 2013.

Fraser Bathgate will be conducting the regions first Disabled Diver Instructor program and Disability Awareness Training Symposium for the tourism industry during his visit to Costa Rica.

Fraser is one of the world's leading consultants on access for disabled people to major outdoor sporting events and concerts. The world's first paraplegic PADI Instructor, he has transformed scuba diving for the disabled, including the development of a special under suit, webbed gloves, weight harnesses and flexible fins.

He has been closely involved in the design of a chin-operated underwater scooter with a long-life battery. He has been involved in advising NASA in the USA on its' weighting systems.

Fraser is a co-founder of the Deptherapy Foundation, which working closely with the John Hopkins University Hospital in the USA, focuses its efforts in assisting disabled soldiers and people with TBI (Traumatic Brain Injury) obtained in car accidents.

He was also the catalyst behind the formation of Disabled Divers International (DDI) in 2010 and serves as its President. In 2011, Fraser received the Reaching Out Award, which designates his induction into the Diving Equipment & Marketing Association (DEMA) Hall of Fame.

ConnectOcean has invited 24 Paralympic Athletes to join the SIN LIMITES Adaptive Diving weekend from the 27th to the 29th of September 2013. Each athlete will participate in a Discover Scuba Session. The weekend will include screenings of inspirational documentaries like "The Current" and "Gaza Diver" as well as keynote speaking events with guest speakers and adaptive divers in training, Jen Bricker and Tiffany Joiner.

The local community will also be invited to challenge the National Paralympic Volleyball team in a game of seated volleyball!

In celebration of launching Costa Rica's first Adaptive Training program, ConnectOcean and Ocotal Beach Resort has put together a 7-night dive package for volunteers wanting to join us for the launch in September from the 23rd to the 30th.

THE PACKAGE INCLUDES:

- 7 nights accommodation on standard double occupancy at Ocotal Beach Resort
- All Breakfast, lunch and dinners
- 3 days of diving – Local, Catalina and Bat Islands (2 dives per day T&W)
- 1 day of Mega Combo Adventure – Zip Lining, Horse Riding, Mud Baths (can be substituted for another day of diving)
- 2 days participation in SIN LIMITES Community Adaptive Dive training program
- Fitness Centre, Tennis court & Wi-Fi
- Taxes & Round trip LIR Airport Transfers

THE COST:

- $1,550 for divers on a twin share basis
- $1,250 for non divers on twin share
- Restrictions: Cannot be used for individual travel, combined with any other special or promotion being used for existing groups.
- Travel valid 23rd to 30th of September 2013
- Booking by 31st July 2013
- Return Airfare not included
- Divers interested to combine the package with the DDI Instructor course must add an additional $750.

INTERESTED DIVERS CAN CONTACT:

- Jimmy at Pavilion Dive Centre on +971 4 406 8828; Jimmy.Zhu@jumeirah.com
- Fei Chin at BFC Travel Management Consultants on +971 55 916 2639; fckaw@dohdubai.com

So why not come and connect? Experience the spell the Ocean casts…come connect with "Pura Vida"…pure life…you will feel it in your entire essence, there are no artificial ingredients. The perfect place with the perfect balance of adventure and relaxation to help you unwind and feel alive again! Come experience Pura Vida with no artificial ingredients!

ConnectOcean
Discover · Connect · Protect

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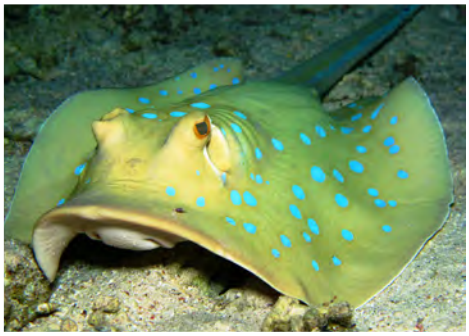
Photo by Ali Bin Thalith

Photo by Ali Bin Thalith

DIVING IN SHARM EL SHEIKH

FEATURE AND PHOTOGRAPHY **MICHELLE CANTILLANA**



On the 8th February 2013, I boarded the 22.5m long and 6m wide Angelina II in Sharm El Sheikh, Egypt along with 11 other divers from The Filipino Scuba Divers Club – UAE (FSDC). Every year, the club organizes an international dive trip for its members. In the past, FSDC has gone diving from resorts in Indonesia, the Philippines, Jordan, Maldives and Seychelles. The club has taken its members to Egypt before but this was the first time the club experienced a 7-day livaboard dive trip.

At the airport, all 12 divers came wearing our FSDC hoodies, excited and anxious about staying on a boat for a week with nothing to do but dive, eat, and sleep. The dive addicts were looking forward to doing at least 20 dives during the trip.

Before the trip, I was really worried that I might get bored on the boat. After all, I will be at sea for a week with no movies, no shopping, and no parties. But being in a club of divers, we easily slipped into a routine of Dive-Eat-Dive-Eat-Nap-Dive-Rest-Optional Night Dive-Eat-Sleep. There was never a dull moment! It was really amazing to know that even in the era where people rely so much on technology and being on the internet all the time, it is still possible to take a break from it. And one of the things that can make us do this is non-stop diving!

At the end of the trip, being a member of SA (Scubaholics Anonymous), I never missed a dive and was able to do 22 dives with my buddy!

It is hard to summarize everything that happened on this 22-dive trip. Instead, I thought it would be better to answer questions about diving on a Liveaboard in Sharm El Sheikh.

WHAT ARE THE MUST-DIVE SITES?

Being in the list of the top 15 dive sites in the world, SS Thistlegorm and Shark & Yolanda Reef in Ras Mohammed National Park must be included in your itinerary. SS Thistlegorm is the most popular wreck dive in the world (Bremner, 2012)[1]. Here you can see motorbikes, trucks, and armored cars inside the wreck and two big anti-aircraft rifles near the bow. For colorful reef diving, plus weird objects such as toilet bowls, Shark and Yolanda Reef is the dive site to be. I highly

recommend spending a whole day diving in Ras Mohammed National Park and another day in SS Thistlegorm.

WHAT TYPES OF DIVING CAN YOU DO?

Since it was a liveaboard dive, we were able to experience different types of diving. There were those easy dives in Temple Reef, Ras Katy, Near Garden, and Far Garden. We also experienced drift diving in Shag Reef, wreck diving in SS Thistlegorm and Dun Raven, night diving in The Alternatives and Laguna Reef 3, and deep diving in Ras Umm Sid and Jackson Reef.

WHAT SEA CREATURES CAN YOU SEE?

We have seen Napoleon Wrasses in almost all our dives, starting from a small one in Shag Wreck to a very big one in Ras Umm Sid. Also, there was never a dive without a blue-spotted lagoon sting ray. We have seen 6 of these and 6 giant sting rays in one dive at Stingray Station. For wide angle photography, you will love the vibrant soft corals and humongous gorgonians in Anemone City.

MY TOP 5 UNFORGETTABLE EXPERIENCES

1. Diving with a dolphin. Every July or August, I usually see dolphins in the Musandam. But this was the first time I was underwater when I saw one.
2. SS Thistlegorm's astonishing visibility. Visibility was still good even inside the wreck. Aside from the bikes and trucks strewn about, the captain's cabin still had air trapped inside so you can see the separation of water on the ceiling.
3. Seeing new creatures such as the crocodile fish, unicorn fish, and red sea urchin.
4. Valentine's Day Special. Our last day of diving was Valentine's Day. At a depth of 5-10m we carefully collected rocks and broken corals (without harming the marine life of course) to form a heart and U-shape on the sea floor. Then we had our pictures taken as the "I" to make a unique Valentine's message to send to our loved ones we left on land!
5. The Wonderful Company. I had a great time both underwater and on the surface. And this would not have been possible without the laughs and stories I have shared with my diving friends in FSDC.

THE LIVE ABOARD EXPERIENCE

If you are passionate about diving, you must try diving from a liveaboard (for 5 nights or more) at least once in your life. Doing three or four dives per day is much more convenient and less tiring if you are on a liveaboard rather than a resort diving, as you save time and energy by not walking from your room to the dive center on each dive. And since there is nothing much to do on the boat, you tend to go for more diving. More importantly, a liveaboard allows you to go to the dive sites too far from resort-based boat charters. Usually these dive sites are more pristine than those which are near land.

THE CABINS

The rooms are spacious on high-end luxury liveaboard yachts. If you are on a tight budget, there are 3-star liveaboard options, however expect a very small cabin with double bunk beds. If you feel too cramped in your small room, you always have the option to use the sun deck where you can sleep on a mattress under the stars. Just be sure to bring a blanket as it gets really chilly especially in February.

FOOD

Full board meals are always included in the fee you pay for the liveaboard. We were very lucky to have an incredible chef and crew. I thought I would shed off some extra pounds because of too much diving. Instead, with the quality and quantity of the food they served, we all gained weight! We had Italian, Japanese, Seafood and Barbeque nights. Water, tea and coffee are unlimited.

DO'S AND DON'TS ON A LIVEABOARD

If you are planning a liveaboard trip, I am sharing the points I consider to ensure a fun, safe and hassle-free trip:

DO'S:

1. Have enough sleep. Since a liveaboard means hardcore diving (with at least 3 dives a day) you will need to have at least 6-8 hours of sleep to have the energy and not miss any dives the next day. You can still socialize with your friends after dinner but just make sure you have enough sleep each night.
2. Wake up early. Have enough time to drink your coffee/tea/milk and do your morning ritual before the dive master rings the bell and shouts 'Briefing!'
3. Do not skip meals. Since the trip is strenuous, your body needs a proper supply of nutrients. Make sure you have you have your full intake of vitamins as well.
4. Bring medicines, especially for motion sickness. Water is unpredictable: it can be calm today and rough the next day so this can make living on a boat very tough. You will never know if you will get colds, a headache or stomach upset. Bring a first aid kit as there is no pharmacy at sea. Bring antihistamines if you are prone to allergies too.
5. Have your equipment checked. You will be doing a lot of diving so ensure proper maintenance of your gear before the trip to avoid any mishaps.
6. Test your new gear before you leave. If you buy any new equipment for the trip, make sure to test it first. If your bathtub or pool doesn't satisfy you, there's nothing like a test dive at Jumeirah Beach!
7. Bring lots of batteries, memory cards, etc. If you don't want to carry a ton of batteries, bring rechargeable batteries for your strobe, camera, and torch (don't forget the charger and back-ups). Make sure you have enough space in your memory cards so you don't miss a thing. Bring extra memory cards or back up your photos on a net book, tablet or laptop so you can erase some snaps from the card.

8. Keep all your things in one place to save time looking for your stuff before gearing up. The boat should provide each diver with a crate where you can put all your wet belongings.
9. Ensure that the boat is equipped with an oxygen kit and know how to use it.
10. Look at a fixed spot on the horizon if you are feeling dizzy or to avoid motion sickness.
11. Swim during the surface interval. You are surrounded by a vast body of water. The spots where they anchor the boat are usually good for snorkeling.
12. Make friends with the crew. You will be with them for a week, so it's a good idea to socialize with them and have a good time. You will be rewarded with very good service, fond memories and new friends!
13. Dive more! Live aboard trips offer unlimited diving since you rent the boat for a certain period of time. If possible, do not miss any dives.
14. Come together, dive together, eat together, and leave together. Dive trips are fun but it is way more enjoyable if you are in a fun and friendly group such as FSDC!

DON'TS:

1. Do not forget your wetsuit. If you are diving in Sharm El Sheikh in February, you need at least a 3mm wetsuit and other things (i.e. hood, petroleum jelly, etc.) that can keep you warm.
2. Do not force yourself. If you are tired or not feeling well, do not force yourself to dive. It is better to skip one dive and rest than miss all the remaining dives.
3. Do not stay on the boat. If the water is rough, it is inevitable that you will get dizzy if you are on the boat. Better to dive with the group rather than stay on the boat. This way you will have fun and avoid motion sickness at the same time.
4. After lunch, do not participate in any strenuous activity. Try to have a nap or just lie down on the sun deck so you will have the energy for the third and fourth dive.

5. Do not sleep without making sure your equipment is secured. Fins in particular have a knack of getting lost because you tend to leave them on the platform where you make your entry.
6. Do not forget to wear your dive computer on every dive. This small device computes your no-fly time and no-deco limit based on your previous dives. The statistics of the next dives will not be accurate if you do not use your dive computer in any of the dives. As you will be doing repetitive dives for several days, it will also contain important dive profile information that can be used by a decompression chamber in case of decompression sickness.
7. Do not go on a live aboard trip if you know you are prone to sea sickness.
8. Do not drop anything like your camera especially if you are diving a 120m wall!
9. Do not smoke if the crew is refilling the tanks.
10. Do not waste water. Water supply is limited on the boat. To prevent running out of water at the end of the trip, consume water wisely. Avoid taking long showers.
11. Do not forget to bring your charger and travel adaptor. Each diver will have their own gadget to recharge. Bring your own charger, adaptor or even extension.
12. Do not make fun of the Dive Master during the briefing or you will be thrown into the cold water.
13. Do not stay in the cabin. Stay in a common area (dining hall) to socialize and to share stories with others.
14. Do not delay your back-roll even for at least one millisecond, if you are all doing a back-roll from a Zodiac at the same time. If you know you didn't make it on time, ensure that the water is clear before getting in or you might risk hurting a diver already in the water.
15. Lastly, my favorite rule, take nothing but pictures and leave nothing but bubbles.

NOTE: 1 – Into the Deep: World's 50 Best Dive Sites, CNN Travel, Jade Bremner, April 2012

DIVING THE BLACK VOLCANIC SAND OF BICOL, PHILIPPINES

FEATURE AND PHOTOGRAPHY **RUSSELL A. LOTERIÑA**, PADI OWSI

Legaspi City is part of the Bicol region located down southeast of the mainland Philippines. This area was conquered by the Spaniards during the 18th Century and was named after the Spanish Conqueror Legaspi.

During my first day in the area, we dove at the Kapuntukan House Reef just a 5 minute drive from the city. It is a shore dive entry with a view of the majestic Mayon Volcano, one of the world's 7 wonders of nature. It is considered to be a perfect cone shaped active volcano. Once underwater, we discovered the sand to be completely black! The sand came from the volcano during eruptions long ago. It's a little scary because the color really is very black but the visibility is perfect! During our first dive, we got to see a giant clam and a variety of macro creatures.

MAYON VOLCANO

This volcano looks beautiful but dangerous to mountaineers because it is very active. Recently – May 2013 – a Filipino and four German mountaineers lost their lives due to an unpredictable eruption.

CARAMOAN, PHILIPPINES

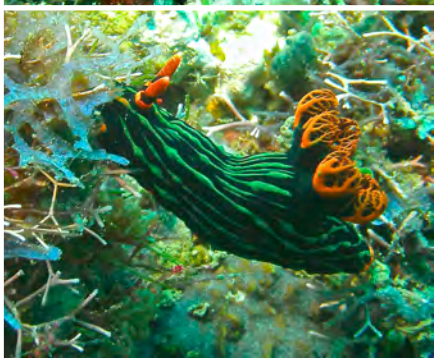
Caramoan, Philippines is the place where the survivor challenge was held; an American TV series. The Virgin Islands is still visible and it's not yet commercialized. A very good place to include in your itinerary.

SAND BAR ISLAND

These islands are connected by a sand bar which means there arew two shorelines, north and south beach. I would definitely recommend this place, this is what you call paradise.

PUERTO GALERA, PHILIPPINES

FEATURE AND PHOTOGRAPHY **DAVID BUSHNELL**



Have you ever been to a dive destination where you can find over 60 percent of the oceans' species? Where you arrive at the dive resort as a guest and leave as a friend or a destination with as much to do above the water as below the water? I'll raise my hand and say I have! The destination I'm talking about is the Puerto Galera area of the Philippines.

Puerto Galera is located on the Island of Mindoro, about 130 kilometers south of Manila. The area is called Puerto Galera because it was a major port in the area for Spanish Galleons way back when. Back in 1973 the area was designated a Man and Biosphere Reserve by UNESCO and has some of the most diverse coral reef diving in Asia.

Most of the dive resorts are located on Sabang Beach. Getting there is an adventure in itself… Most resorts offer transportation via van to Batangas (2-3 hours depending on traffic) and outrigger across the channel to Sabang Beach (boat ride is about an hour). The resort my party stayed at, Atlantis Dive Resort, went so far as to have a representative meet us at Manila Airport and escort us to our van.

In my opinion, the Atlantis Dive Resort is amongst the nicest in the area. It maybe a little more expensive, but you get what you pay for. The first trip I took to Sabang, during a Christmas holiday in 2012, I tried a different resort and ended up at Atlantis instead. I enjoyed it so much I went back with friends in March 2013. The dive shop and staff are amongst the most professional I have dealt with. For the money, the rooms are nice and well appointed and the food in their restaurant is five star quality. If you decide to go over Christmas, the staff prepares food and feeds the needy and welcomes guest participation, which is a fantastic experience. The resort offers up to five dives a day if you want to include a night dive. There are three different night dives offered, your run of the mill night dive, a mandarin fish dive, and a fluoro dive.

The dive masters are extremely professional and friendly and after a very informative dive brief you head out to the boat (six divers maximum) where your gear is set up and waiting. That's right, they set it up for you and haul it out to the boat!

The diving is amongst the best I have experienced. You can do anything from muck, to reef, to tech diving. As I mentioned earlier, the variety of critters is phenomenal and the list of what you can see would be too long to mention in this article! The visibility underwater varies from 10 meters at worst in December to over 30 meters in March. The water temperature in December was around 26 degrees and around 28 degrees in March. The best time to go in regard to weather and water conditions is March and April. If you go in March or April, don't miss a trip out to Verde Island, which is home to the Pinnacles, a phenomenal dive site along with a great afternoon lunch and beautiful beaches. I also recommend the Mandarin fish dive and the Fluoro dive. The Mandarin fish dive is in Sabang Bay at a site that pretty much guarantees a sighting of this elusive little fish, or in our case quite a few fish. The Fluoro dive is very cool. The dive center gives you a special lens that fits over your mask and a blue filtered torch. The experience is like diving in a black light poster.

Among the many amenities at the dive center, there is a cleaning tank just for cameras as well as a room dedicated to the care and maintenance of cameras and a computer in the room for downloading your photos. Besides the above mentioned camera room, the dive facility also offers specified cleaning tanks for your dive gear, an assigned secure storage area for your dive gear, and a nice retail shop to pick up any items you may have forgotten.

While diving is the big draw to the area, there are also non-diving activities. The area is surrounded by hills on the verge of being mountains and lush jungle. There are a variety of half-day trips and full day trips offered and most resorts will make the arrangements for you. We went on a day trip to Tamaraw and Talipanan Falls, two beautiful waterfalls up in the hills. Tamaraw is probably the more spectacular of the two. Located right next to the road, Tamaraw is a beautiful very high waterfall that offers some nice photo ops. Talipanan can be reached either by foot or by a water buffalo driven cart and most of the operators include a delicious picnic lunch at Talipanan.

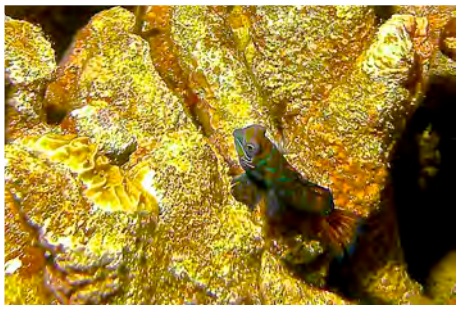
At night, Sabang comes alive with a variety of activities. We elected to remain at the laidback beach bar that is part of Atlantis. We enjoyed the company of other divers, the dive staff, and our favorite barkeep, Ton Ton. Also enjoyable,

was the nightly sunsets and the sing-a-longs with our friendly staff and visitors.

So if you're looking for a destination where you can find over 60 percent of the ocean's species, a place with some of the world's most friendly people, a resort where you come as a guest and leave as a friend, and things to do beside dive, Puerto Galera is the place. You won't want to leave, I know I didn't and you're sure to go back once you do!

Feel free to contact me with any questions and see the links below for more info:
www.atlantishotel.com
www.puertogalera.net
www.puertogaleradive.com
www.divepuertogalera.com

EMAIL: testpilot047@yahoo.com



FROM ABU DHABI TO BELIZE

UNBELIEVABLE RETIREMENT, UNBELIZEABLE DIVING

FEATURE AND PHOTOGRAPHY **F GORDON KIRKWOOD**

Belize – Mother Nature's best kept secret – has great natural beauty, as in this view from the Miramar Hotel Balcony in Caye Caulker when heading out early in the morning to dive the Blue Hole.

After 5 years of working in Abu Dhabi, I retired from working in the oil industry and headed to Belize. We chose to live in Belize rather than return to Scotland for two main reasons, for my wife, Gillian, to be closer to our kids and her family in the USA and for me to live in a place with warm water all year round. So in January 2010, we arrived in Belize with two suitcases, a dive bag and two cats. On arrival, I enrolled myself in the Belize Qualified Retired Persons (QRP) program which gave us residency and after a period of camping in our house, our freight arrived after 5 months and we could get on with building our life here.

Belize is a beautiful, small, ex-British colony, located in Central America just below Mexico with a 170km coastline facing the Caribbean. With a low population and great natural beauty, Belize's economy relies largely on tourism, dominated by cruise ship visitors but with overnight visitors becoming much more significant. It is home to a large section of the Meso-American Barrier Reef, the second largest barrier reef in the world and the largest in this hemisphere, and three out of four of the Atolls in the Caribbean.

While I was working in Abu Dhabi, I dived a lot with Abu Dhabi Sub-Aqua Club, ADMA Diving Club and Desert Sports Diving Club in Dubai. During this time, I also took my diving in a more professional direction, travelling to Salalah in Oman to be first trained as a Divemaster and then as a Diving Instructor with both PADI and BSAC. And in the last two years I worked 5 days in the oil industry in Abu Dhabi and spent the 2 days of most weekends diving and sometimes working at Freestyle in Dibba, with the inimitable but sadly departed Terry Moore (RIP).

I had hoped to carry on my professional diving career in Belize, but under the terms of my QRP residency, I am not allowed to seek employment nor be paid for work – so my dive instruction efforts here have been mainly confined to teaching friends on holiday, staff from a local dive shop and the occasional kid from a local school. That does not mean I have been idle in my retirement as I have been very busy with several voluntary activities including: Being an Independent Oil Industry Advisor to government and non-government environmental; organisations Volunteering for the Belize Humane Society (saving dogs and cats); Volunteering for the Belize Wildlife Emergency Response Team (Catching and Transporting Wild Animals to Vets and Rehabilitation Centres); Working on Emergency Procedures for a local dive shop; Being part of the Turtle reporting network; Taking underwater photographs which were used in several conferences and publications and getting them printed on postcards; Helping draw up a dive map for the whole of Belize; Making presentations on marine life to schools and colleges; Co-authoring two published scientific papers on oil and the environment, and Being a member of the Marine Mammal Stranding Network in Belize (rescuing Manatees).

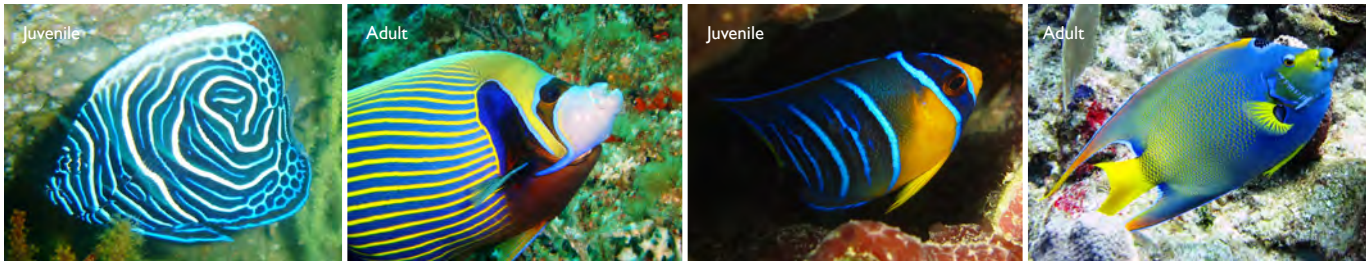
But enough about me, what of the diving in Belize?

Belize has a wonderful and varied set of dive sites on its Barrier Reef and Atolls. The dive sites are documented in several books about diving in Belize and more recently a dive map of the whole of Belize has been produced (sponsored by the Belize Tourism Board, published by Franko Maps in Florida USA). A comparison of the dive site waypoints from my GPS in the UAE (and Oman) vs. Belize, shows just how many more dive sites are packed into a smaller country here.

The Caribbean/Atlantic eco-system in Belize is different to the Indo-Pacific eco-system in the UAE and Oman. There seem to be many more soft corals and sponges in Belize and more hard corals in the UAE.

The diversity of the fish in the Indo-Pacific eco-system is well documented as being much greater but on an average dive the number of fish I have seen in both places is about even.

When I first got here, I had a debate with the local Belizeans about which was the most beautiful fish in the sea. The Emperor Angelfish from the Indo-Pacific eco-system in the UAE or the Queen Angelfish from the Caribbean/ Atlantic eco-system in Belize. That debate continues.



What is the Most Beautiful Fish in the Sea? The Emperor Angelfish (left) from the UAE or the Queen Angelfish (right) in Belize?

Whalesharks come to Belize too. We have Whalesharks here each year feeding on the spawn of the Cubera Snapper at Gladden Spit just after the full moon in April and May. Holidays in Belize are promoted to dive with Whalesharks. However in my view the Whaleshark diving in the Musandam, north of the UAE, is much better than that in Belize. The Whaleshark numbers seem to be declining here and the dive that we do see them is in the deep blue so if we don't see them, it is disappointing, whereas the numbers seen in the Musandam and the UAE seem to be rising and they are seen on reef dives where there is plenty of other stuff to see, if Whalesharks are not.

My favourite dives in Belize are:

- Halfmoon Caye Wall, Lighthouse Reef Atoll where we see big Caribbean Reef Sharks up close. This is the second dive on a great dive trip including diving the Blue Hole, Halfmoon Caye Wall and Aquarium at Lighthouse Reef Atoll.
- Esmeralda/Tackle Box in Hol Chan off San Pedro where we see plenty of Nursesharks, Turtles and occasionally come face-to-face with Dolphins, and
- Aquarium, Lighthouse Reef Atoll where we see majestic Spotted Eagle Rays cruising up and down the reef wall.

In addition to these, there are many other dive sites on the Barrier reef and Atolls which are home to a bunch of interesting marine life as the rest of my photos show.

Rescuing an orphaned Manatee on the outskirts of Belize City. Once the animal was stabilised, I took in my car to the rehabilitation centre in northern Belize.

So as you can see, I have been very lucky in getting in some great diving in my retirement. If you are interested in diving in Belize, here are a few useful links:

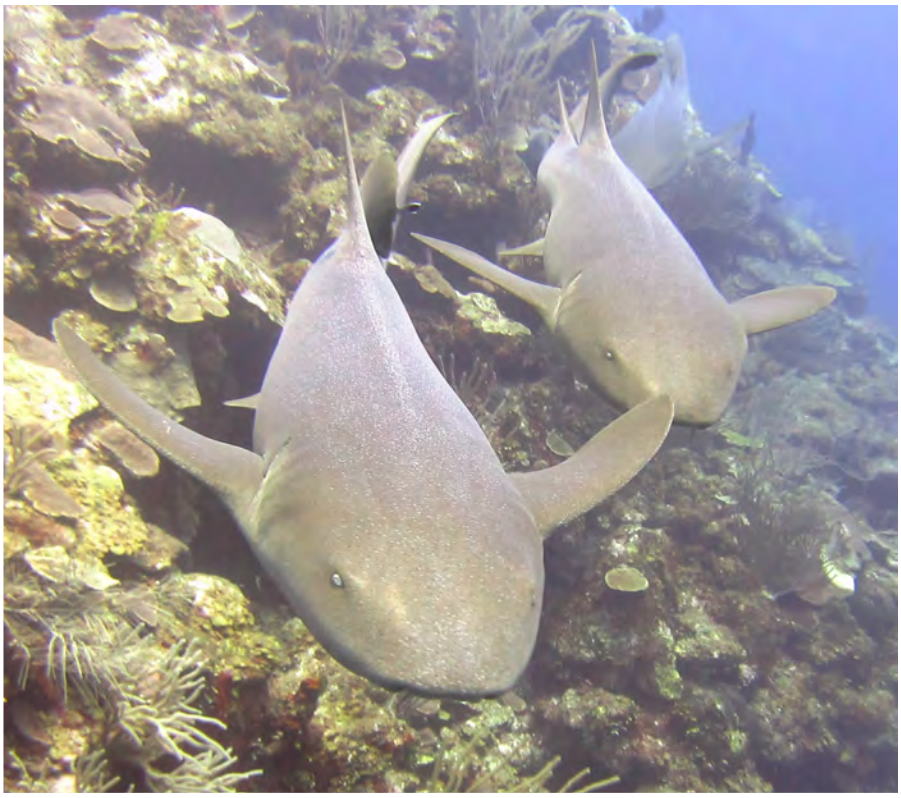
THE BELIZE TOURISM BOARD
www.travelbelize.org
(For all information on holidays and retirement in Belize)

BELIZE DIVING SERVICES – CAYE CAULKER
www.belizedivingservices.net

SPLASH DIVING BELIZE – PLACENCIA
www.splashbelize.com

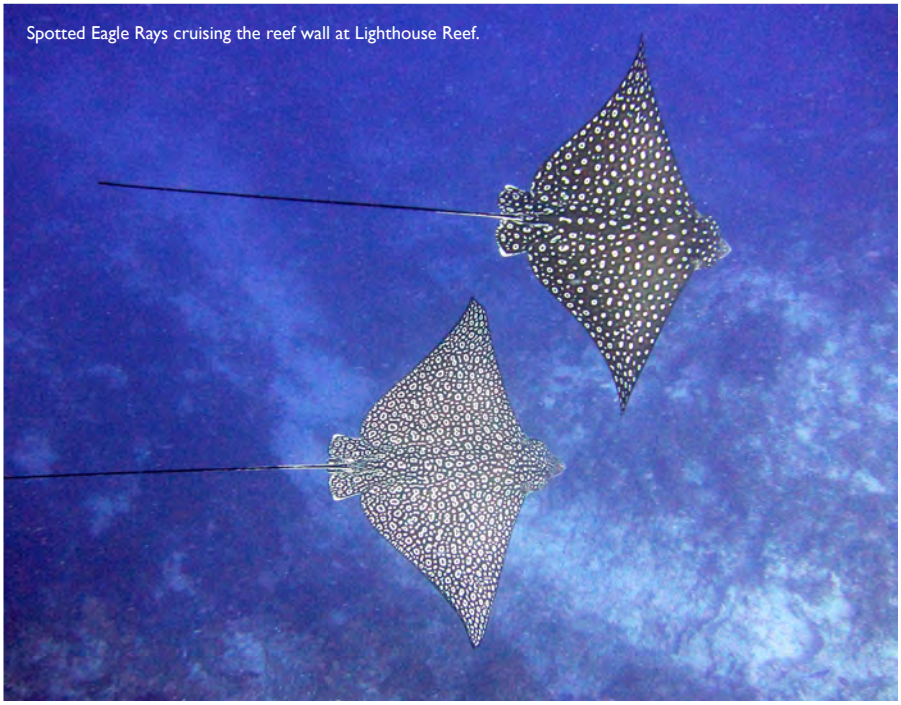
(These last two are both good dive shops that I dive with a lot. They can also help find accommodation locally).

http://www.sportdiver.com/destinations/belize/dive-elements-belizes-wild-atolls
(A good article about diving in Belize, including a wild camping trip that I made with a writer and a photographer – hosted by Belize Diving Services – in February 2012).



Probably the Best Dive of Our Lives. Meeting Dolphins off San Pedro.

Being part of the Turtle reporting network, I get to photograph and document all the turtles I see whilst diving.



Spotted Eagle Rays cruising the reef wall at Lighthouse Reef.

EPILEPSY AND SCUBA DIVING

FEATURE **BARBARA KARIN VELA, MD** AND **SAŠA JANJANIN, MD**

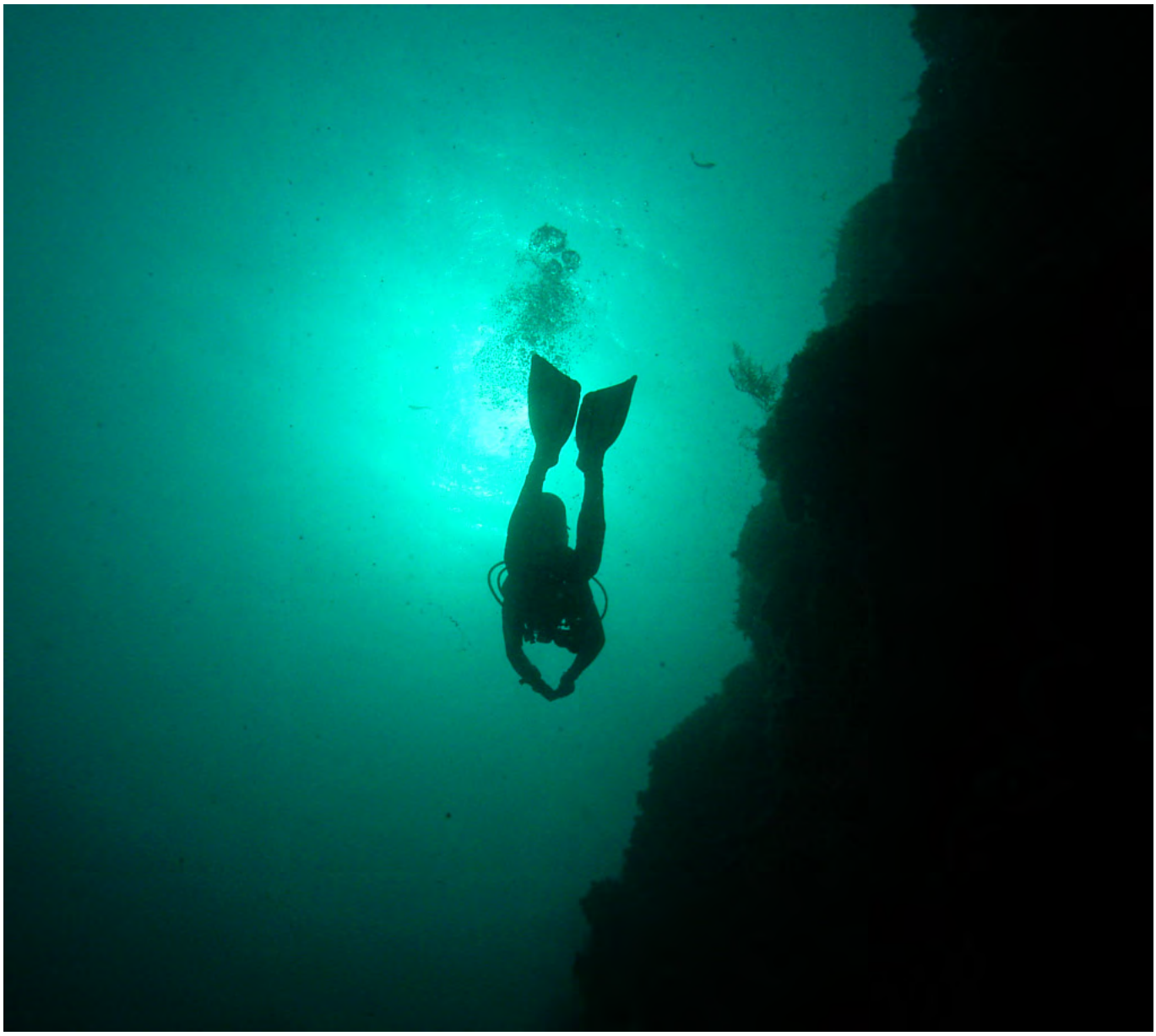


Photo by Jennifer Sharp/Marine Photobank

Epilepsy is a neurological condition in which a person has recurrent seizures. The types of seizures depend on what part of the brain is involved. The term epilepsy says nothing about the type of seizure or cause of the seizure, only that the seizures happen again and again.

Some people with epilepsy simply stare blankly for a few seconds during a seizure, while others have full-fledged convulsions.

Because epilepsy is caused by abnormal activity in the brain cells, seizures can affect any process your brain coordinates. A seizure can produce: temporary confusion, a staring spell, uncontrollable jerking movements of the arms and legs, loss of consciousness or awareness, etc. Symptoms vary depending on the type of seizure. In most cases, a person with epilepsy will tend to have the same type of seizure each time, so the symptoms will be similar from episode to episode.

Epilepsy is considered an absolute contraindication to scuba diving. During a dive, a person is exposed to many stimuli that are known to trigger seizures, like a glare, flickering lights, sensory deprivation, hypervantilation and increased oxygen partial pressure. The primary concern is that a seizure underwater is likely to result in death by drowning. Having a convulsion underwater often involves breath holding during the fit, making pulmonary barotrauma a high risk.

This is the recommendation from BSAC Medical Committee: "An epileptic can be permitted to dive after five years free from fits and off medication. Where the fits were exclusively nocturnal, this can be reduced to three years".

There is scientific evidence that suggests that individuals who have been free of seizures, without medication, are unlikely to have further seizures after a period of five years. However, statistics still indicate that the probability of another convulsion is greater than in the rest of the "normal" diving population (believed to be less than one percent).

Most of diving physicians are very reluctant to allow people with epilepsy to dive.

Dr. Karin Vela is a Diving Medicine Physician EDTC/ECHM IIa and is working in the Dubai London Specialty Hospital.

Dr. Saša Janjanin is a double European Board-Certified in ENT and Facial Plastic Surgery and is working for the Dubai London Specialty Hospital and The Children's Medical Centre.

NO PANIC, WE'RE DIVERS!

FEATURE **DR. ANDREAS ACERANTI** AND **DR. SIMONETTA VERNOCCHI**

Experimenting anxiety, even only for a short period, is never pleasant. Even more when it is accompanied by its bad brother, panic, and even more when it is not experienced on land, but underwater. The reason why healthy subjects without a history or family history of anxiety or panic suddenly suffer from panic attacks underwater remains, to date, unknown. However, it is important to try to understand its mechanisms. Panic, in fact, although harmless on its nature, may be the most common cause of accidents among divers; as James Jones wrote in his novel, Go to the Widowmaker: "The panic was the greatest danger, the enemy, the only danger that there was in diving".

Although outside the scope of fiction, the experts in panic in diving Arthur Bachrach and Glen Egstrom, authors of the essay Stress and Performance in Diving, agree: "Most of us in diving research believe that panic is the overwhelming cause of the majority of injuries and fatalities in diving". Any experienced divemaster or instructor can confirm these statements. That should not make us think that panic is an always lurking enemy, ready to strike anyone regardless of age, experience, sex or breed: thought dangerous, panic is usually preventable.

A recent study (Colvard et al., 2000) examined more than 12,000 divers who had experienced panic while diving with the aim to find out the generating reasons. The results were surprising. Respondents were offered a list of 43 possible causes of panic, such as "sharks", "darkness", "air hunger" and so on. The options were divided into three categories, relating to diving conditions, equipment problems, physical and/or psychological problems. The divers were asked to assess which of these threats has been present during the panic attacks. Well, among all 43 possible threats, the three most selected boxes in each category were the last ones: "Other." In short, the events triggering the panic reactions are not among objective causes of a problem of a justified situational anxiety. In most cases, the triggering reason was something trivial or routine, something that no one would see as a reason to panic in another moment.

Reading DAN's annual reports on accidents and fatalities in diving, it's evident that an astonishing number of dives could have been concluded easily if the diver had followed the bases of basic training. Just think of the rule "Do not hold your breath and do not go up too fast", how many times have we read, studied, taught, practiced it, thinking that never and ever we would do such an error.

Yet, anyone can be in panic, a panic attack is as voluntary as a heart attack.

The panic is not cowardice, it is not lack of courage, but an involuntary reaction to a massive secretion of adrenaline into the bloodstream by order of the sympathetic nervous system, which, facing a huge threat, causes the heart rate, body temperature and blood sugar to quickly and dramatically rise. "Butterflies" start flying in your stomach or a sense of nausea appears. You start sweating. Skin becomes red or pale. Your breath becomes faster, less deep and dyspnoeic (or irregular). You experience the phenomenon known as "perceptual narrowing", during which the field of vision lost can restrict peripheral vision, achieving an effect similar to looking at the world through a tube.

The worst part is feeling more and more agitated and you cannot think clearly. Your attention becomes focused on the problem, and the solution for that situation seems to fade away and no longer exists. With a real panic attack in progress, there is very little that the rational part of the brain can do to stop it quickly, because the body takes several minutes to absorb the adrenalin, and the risk to take the wrong actions increases.

The good news is that despite the mystery that surrounds it, panic can almost always be

prevented. It is shown by a clue, at first sight insignificant, reported in the above-mentioned study. Although the results provided by divers on the plausible causes of their panic attacks seemed unrelated and apparently so scattered that it was impossible to draw a logical, statistical or epidemiological conclusion, all tended to agree that they had started to hyperventilate just before the panic attack began. It is worth mentioning that hyperventilation (rapid breathing, shallow, irregular) is a classic sign of anxiety. Anxiety is an accumulation of daily stress that goes as far as the generation point of an unconscious fear of not being able to solve problems; from this arises a feeling of powerlessness which amplifies the uncertainty, worry, fatigue, frustration and fear that are still part of everyday life. It is therefore likely that this is what happens to the diver who, like most of us, is stressed even before entering the water. There may be memories of a difficult or frightening dive – the diver is concerned about this. Perhaps the diving conditions are unusually difficult. Or maybe he went to bed late the night before, found traffic in the morning and had to run to catch up with the diving boat. Or he cannot get that damn office problem out of his head. Or the instructor, who should then change method, is getting him nervous, taunting him, insulting him. Or the students are particularly unruly and refuse to follow directives.

At the time when he enters the water, the diver is troubled, angry, less able to react in a consistent and ready way: so he can easily be the object of fear. Breathing is more difficult than normal, he uses the BC more than usual, and when something unexpected happens, even harmless (like the mask comes off or the fin remains entangled) he begins to hyperventilate, but the air never seems enough. The feeling of "air hunger" and the risk of suffocation increases. Panic is at hand. Of course one should not assume that all divers who remain stuck in morning traffic will have a panic attack: people, as human beings are different from one another and unique, deal with stress and everyday worries in different ways. Some are more vulnerable than others to stress and are therefore more vulnerable to panic. Yet no one, as mentioned, is immune to panic, because our individual threshold of panic may also change from day to day.

Although it may seem scary, this should reassure the reader that a panic attack is rarely sudden during a dive – in most cases, stress has been working for hours and sometimes even days. In the end, the straw breaks the camel's back and the diver feels overwhelmed: the fear of failure triggers panic. Think of a juggler with three plates in the air, then four, then five. Finally, one more element is too many, and the exhibition ends with a shower of shards of pottery and an explosion. The cause of loss of control is not the sixth plate in itself, but simply having too many plates in the air. Similarly, anything can trigger panic and make it explode, but it can easily be prevented "by removing some plates," or reducing stress and psychological pressure when we are under water and refusing to take care of all unnecessary burdens and responsibilities that do not compete.

One of the best ways to reduce and avoid stress is to establish a series of breaks in the day of the dive: rest, focus on the situation and think about what you are going to do next. If you are stressed when you get at the meeting point, once parked, possibly before moving the equipment, take a break for a minute or two and relax. When the equipment is on board, before you get dressed, take a break. When you are in the water, before you dive, take a break. And so on throughout the dive.

There are at least three good reasons why frequent breaks reduce stress and help to prevent panic. First, regular breaks reduce fatigue; rest promotes lowering the level of adrenaline, slowing the heartbeat, slower and deeper breathing, and the level of carbon dioxide in the blood turns[1] to normal. Secondly, the breaks are a chance to enjoy a moment of mental rest and without stress to slow the rush of the events with which we are obliged to keep up, paying then more attention to new needs that arise. Finally, frequent breaks are an opportunity to think about the next task and how to do it. The next step is to dress up. Before you jump in the suit, take a break and mentally organize the steps to follow, one after the other, mentally scroll the list of requirements. Try to visualise the problems that can occur and their solutions: the psychology of sport has proved that visualisation is a powerful weapon against anxiety, stress and panic.

Breaks may also be an opportunity to keep your breathing under control. Breathing with the chest wall, and not with the diaphragm, is an intensive energic action because we use the wrong muscles. Breathing with the diaphragm is the natural way of breathing, it induces a state of relaxation and is fundamental to keep our breathing under control: hyperventilation is in fact a well known cause of anxiety and panic.

In conclusion, when you do not feel good, it's better not to dive. When you have a feeling of nausea and just do not want to dive for some reason you cannot identify, it is better not to. Do not let peer pressure push you beyond your limits as you would begin your dive already stressed and more susceptible to panic. If anyone does not understand and insists in making you feel embarrassed, accusing a sudden otalgy or pretending to fail in compensating is always a great escape!

NOTE

1: In hyperventilation phase, CO_2 decreases (saturation of O_2 increases), and normal breathing helps to restore natural conditions. This however, is a point still debated.

PRACTICAL THOUGHTS ON PHYSICAL FITNESS AND A RETURN TO DIVING

FEATURE **NEAL W. POLLOCK**, PH.D.

DAN® DIVERS ALERT NETWORK EUROPE

The term "fitness to dive" includes a wide range of elements: medical and psychological fitness, appropriate knowledge, adequate physical skills and adequate physical fitness. Breaks from diving can compromise readiness in many of these areas. This article will discuss physical fitness in light of breaks from diving.

Some divers can get in the water regularly. Others may face substantial breaks between dives, with activity restricted to annual vacations or seasonal conditions. A host of factors can result in extended periods of time spent on dry land.

Periods of nondiving may be associated with greater or lesser physical activity than might be normal during diving. Picture the triathlete, for example, who may not make time to dive for many months while training for a competition. Declining physical fitness is not likely to be an issue.

For each case like this, however, there are probably far more in which the hiatus is associated with reduced physical activity: Life gets busy, and things get put off. The forces that keep divers out of the water may also have them cutting back on regular exercise. In such cases, the return to diving can be problematic.

USE IT OR LOSE IT

If they are not practiced, physical skills will deteriorate; this is the use-it-or-lose-it adage at work. Some divers take advantage of refresher programs or review training materials when they feel they might be rusty. Physical fitness requires the same consideration. Has your fitness level suffered? Will you be able to comfortably squeeze into your suit?

The experienced diver knows that good neutral buoyancy skills can make the overall energy demands of most dives pretty modest. But did the refresher training do enough to bring buoyancy control back to a high standard? What about the most physically challenging elements? Standing up and walking in full gear, surface swimming, water exits and, of course, any unexpected or emergency events. A little bit of "what if" time should remind you that a series of small compromises could turn a nonevent into a serious situation.

The solution? Well, you could always hang up your fins for good. Everyone should probably do that eventually. We have a lot of control, though, on when that "eventually" needs to be. A better strategy would be to make sure we are ready to play our games when we want to play. The things we need to maintain our options are honest self-appraisal, habitual physical activity and consideration of activity-specific fitness needs. Meeting these obligations not only reduces the challenge of return to diving after a break, it improves readiness for all diving and other physical activities.

Honest self-appraisal is a challenge to us as a species. Common lapses range from unawareness to self-delusion. While issue avoidance and the proverbial rose-colored glasses can be compelling, a pattern of honest, objective appraisal is healthier. If we are honest with ourselves, most of us are reasonably capable of judging our readiness to perform in an arena we understand. Such an admission is the first step to recovery.

ACT ON IT

Once you've identified the problem, the next step is to act. Physical fitness over the lifetime is important to protect our general health and our capabilities. By staying in reasonable shape, we eliminate a huge barrier to participation in or return to diving, or almost any other activity. The U.S. Surgeon General has long recommended regular physical activity on most days of the week (Physical Activity and Health, 1996). We did not need the Surgeon General to tell us that, though. We just need to do what we know is reasonable.

The choice of physical activities for general health is wide open. Good choices will include components for strength, aerobic and dynamic/flexibility. Running, swimming, cycling, walking, volleyball, racquetball, soccer and dancing are just a few examples of activities that can form the core.

The most important thing is to choose those that fit your preferences, schedule and abilities. Alternating activities can make things more interesting and reduce the likelihood of overuse injuries. Working with a partner will make it easier to keep going. Joining or establishing a peer group and/or combining physical activity with other interests can also be effective. For example, hiking and kayaking might be combined with bird watching and/or photography.

Swimming is a great choice of exercise for many reasons. It involves many muscle groups and improves aerobic capacity.

It produces relatively low joint forces and thus is less likely to cause injury. It will also improve comfort in and around the water. While many debate the threshold swimming ability appropriate for safe diving, most will acknowledge that enhanced skill would be a good thing generally and a definite plus in emergent events.

There are a lot of ways to get into swimming. For many, simple lap sessions might be appropriate both for fitness and as an escape from the stressors of the day. Traditional lessons and stroke improvement classes may help those needing assistance. The more social lap swimmer may prefer a master's club. Others near active aquatic centers could find or encourage intramural water polo, underwater hockey, breath-hold training or other programs.

You need not be an expert in an activity to get a physical benefit. A poor swimmer, for example, working for every stroke, can get a better workout than a skilled swimmer lugging along. Additionally, the satisfaction of developing new skills may be motivational in its own right.

THINK ABOUT IT

The conversation to this point has focused on regular physical activity. This is important in the return-to-diving question since maintaining fitness reduces the problems of a break in activity. Exercise should be a part of our basic routines. Good intentions aside, though, we

know that this is often not the case. A recent study found that only 20 percent of the adult population reported strength training more than two times per week (1998-2004), less so with increasing age and despite initiatives to increase participation (Kruger et al., 2006). We each need to draw on our personal initiative to reverse this trend.

So, what about the dive trip coming up right away? Are you ready? It's honest self-appraisal time. Take stock of your situation. Gather your gear. If you hesitate at all in setting it up or mentally walking through the steps of dive planning, refresher training should be top priority. Using your own gear for the retraining will allow you to test it and yourself under supervised conditions.

CHECK YOUR GEAR

Ensure that all the appropriate servicing is complete. Address any fit issues to reduce the chance of an unpleasant experience. If a suit is tight when you put it on in the living room or poolside, it will probably feel worse as you enter the water after too long on dry land.

CHECK YOURSELF

Refresher dive training will frequently focus solely on basic diving techniques. It is in your best interest to test your general abilities as well.

Are you physically, medically and psychologically fit? Stressful times and excessive fatigue might make a dive too much to handle. In such cases, it would be best to delay diving until you have had some recovery time. Enjoy a bit of vacation time before you get into the water. If physical fitness is the only question, then the pool may be the best place to answer it.

Can you complete a continuous 200-meter (656-foot) snorkel swim in less than seven minutes without difficulty and without needing to rest after finishing?

Can you do head and feet-first surface dives to the bottom at 4-5 meters (12-15 feet)?

Can you pick up, don and clear your mask and snorkel from the same depth on one breath?

These quick tests are not definitive, but if you can complete all of them, then your physical fitness and snorkeling skills are probably reasonable. Immediate practice of each skill will not improve physical fitness, but practice will improve physical competence, which is always important but even more so if your fitness is not optimal.

DUNK IT

The pool is also a great place to first test your neutral buoyancy in full gear. Yes, you will have to add weight to be neutrally buoyant in salt water, but the pool test will get you close. Remember that the amount of weight required often changes as experience grows. Most divers require less weight as they relax and gain comfort and confidence underwater. Conversely, putting on weight in personal soft issue may demand additional external weight. In either case, it is better to get close to appropriate weights in the pool without the additional pressures of holding up a group or making major weight belt adjustments under less ideal circumstances.

If your performance is far off the mark during your pool session, you may want to postpone your return to diving and work a little more on your skills. After all, you have to consider the health, safety and enjoyment of yourself, your buddy and anyone else who would be affected by your performance. At the start of the trip, if you are close but not sure, schedule a one-on-one or small group session with a diving instructor under entry-level environmental conditions before your main dives.

While it may not seem like an auspicious beginning, starting with a relaxed, problem-free dive may be the best way to make it a relaxed and problem-free trip. When you get home, you will be in the right frame of mind to think about additional steps to take to ensure your readiness for the next trip.

ABOUT THE AUTHOR

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REFERENCES

Physical Activity and Health: A Report of the Surgeon General, 1996. http://www.cdc.gov/nccdphp/sgr/ataglan.htm.

Kruger, J., Carlson, S., Kohl, H., "Trends in strength training - United States, 1998-2004,"

Morbidity and Mortality Weekly Report 2006; 296(12): 1459-1460.

UNEP

THINK·EAT·SAVE
WORLD ENVIRONMENT
DAY 5 JUNE

GLOBAL FOOD WASTE PER YEAR IS ROUGHLY 30% FOR CEREALS, 40-50 % FOR ROOT CROPS, FRUIT AND VEGETABLES, MEAT AND DAIRY, PLUS 30% FOR FISH

www.unep.org/wed

UPCOMING EVENTS

WORLD ENVIRONMENT DAY

5 June

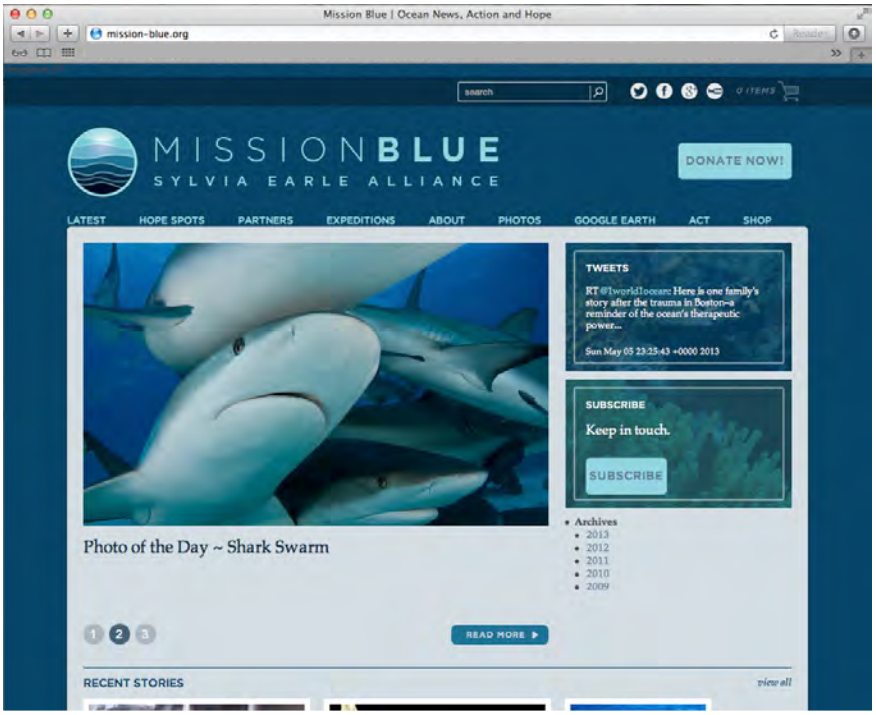
WORLD OCEANS DAY

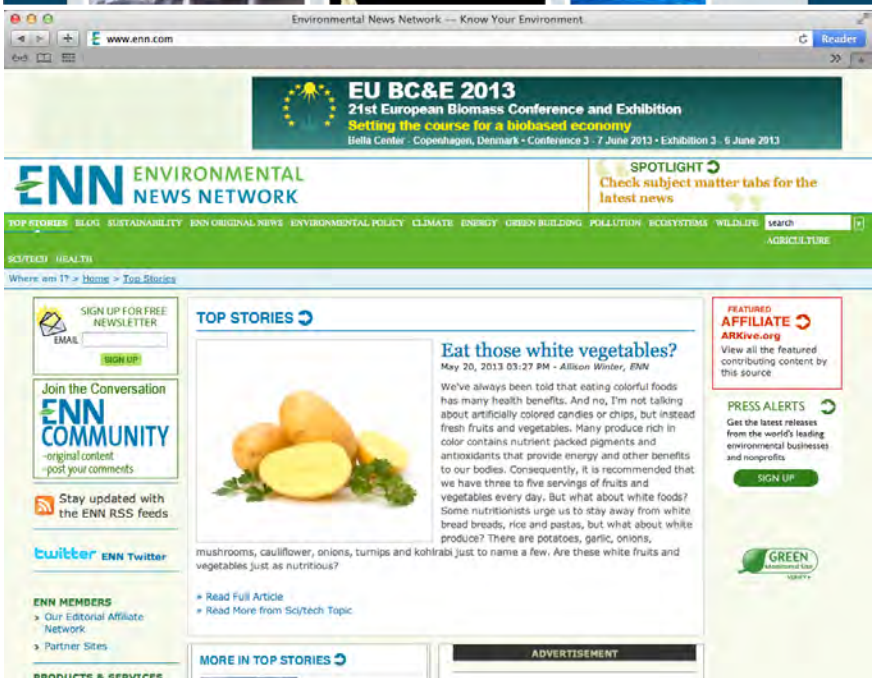
8 June

INTERESTING LINKS AND RESOURCES

ENVIRONMENTAL NEWS

- http://www.enn.com
- http://www.mission-blue.org





EDA
جمعية الإمارات للغوص
Emirates Diving Association

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Vice Chairperson Essa Al Ghurair
The Secretary General Jamal Bu Hannad
Financial Director Khalfan Khalfan Al Mohiari
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MISSION STATEMENT

To conserve, protect and restore the UAE marine resources by understanding and promoting the marine environment and promote environmental diving.

LEGISLATION

Emirates Diving Association (EDA) was established by a Federal Decree, No. (23) for the year 1995 article No. (21) on 23/02/1995 and chose Dubai as its base. The Decree stipulates the following responsibilities for EDA.

- To legislate and regulate all diving activities in the UAE.
- Ensure environmentally respectful diving practices in all EDA members.
- Promote and support the diving industry within the UAE by coordinating the efforts of the diving community.
- Promote diving safety in the commercial and recreational diving fields through standardization of practices.
- Promote and preserve historical aspects of diving within the gulf region and enhance environmental education to diving and non diving communities through EDA activities.

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Photos Gilles Di Raimondo

The Sudanese Red Sea...

Inhabited islands, unexplored wrecks, uncharted reefs... Every live-aboard is an expedition like during the pioneer period, back in the 50's.

The adventure No Stress

THE BOAT

A luxury ketch with all comfort and modern technologies on board.
Especially designed and equipped for the practice of diving. Self-governing for long-run trip
Experienced captain and competent dive guide
Sudanese cook.

THE SITES

From the classic ones (Sanganeb, Shaa'b Rumi, wreck of the Umbria...) to the shark heaven of Angarosh, Abington and Merlo, the hardly dive archipelagos of the Suakins or even the virgin spots of the deep south... Sharks (many species including the famous hammerhead), manta rays, dugongs, turtles, dolphins and many more species are to be discovered.

THE DIFFERENCE

No schedule, no group. Just a handful of divers or explorers sailing to visit remote places, **rare spots and pristine reefs full of marine life.**
In total security.

General informations, specifications

- Web : facebook : NS Exploring Sudan
- Mail : contact@divenostress.com